

Attorney's Docket No. GOEC 2 00001

UTILITY PATENT APPLICATION TRANSMITTAL LETTER
 (Only for nonprovisional applications under 37 CFR 1.53(b))

03970 U.S. PTO
10/67410809/29/03
17414
PT

Mail Stop Patent Application
 Commissioner for Patents
 Alexandria, VA 22313-1450

Transmitted herewith for filing in the patent application of:

Thomas R. Goecke

Entitled: **PRESSURE SENSITIVE ADHESIVE TAPE FOR FLOOR MARKING**

Enclosed are:

7 sheets of specification, 1 sheet of claims, 1 sheet of Abstract, 1 sheet of drawings Fig. 1
 an executed Declaration and Power of Attorney for Patent Application.

[X]
 [X]

CLAIMS AS FILED				
FOR	NO. FILED	NO. EXTRA	RATE	FEE
TOTAL CLAIMS	10 - 20 =	0	[] \$18 LARGE [X] \$09 SMALL	\$ 0.00
INDEPENDENT CLAIMS	1 - 3 =	0	[] \$84 LARGE [X] \$42 SMALL	\$ 0.00
BASIC FEE	[] LARGE ENTITY \$750 [X] SMALL ENTITY \$375			
TOTAL FILING FEE				\$ 375.00

- X A check in the amount of \$375.00 to cover the filing fee is enclosed.
- X The Commissioner is hereby authorized to charge any additional fees which may be required at any time during the prosecution of this application without specific authorization, or credit any overpayment to Deposit Account No. 06-0308.

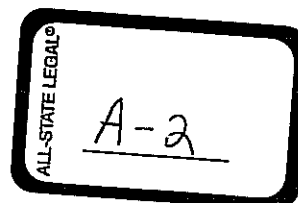
29 September 2003
 Date

Timothy E. Nauman
 Attorney of Record
 Timothy E. Nauman
 Reg. No. 32,283
 FAY, SHARPE, FAGAN,
 MINNICH & McKEE, LLP
 1100 Superior Avenue, Seventh Floor
 Cleveland, Ohio 44114-2518
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EXPRESS MAIL CERTIFICATE

I hereby certify that this Utility Patent Application Transmittal Letter and accompanying papers are being deposited with the United States Postal Service "Express Mail Post Office To Addressee" service under 37 C.F.R. 1.10 and is addressed to the Mail Stop Patent Application, Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on September 29, 2003. EXPRESS MAIL NO.: EV 341153993 US.

George B. George
 George B. George



Pressure Sensitive Adhesive Tape for Floor Marking

ABSTRACT:

The pressure sensitive adhesive tape of this invention comprises a first layer of polymeric material, particularly a polyvinyl chloride, having a Shore A Hardness of between 92 and 100 and a second layer of adhesive material attached to a surface of the layer of polymeric material.

BACKGROUND:

This invention relates to an adhesive tape having superior ductility, strength, tear resistance and abrasion resistance, particularly a pressure sensitive adhesive. Polymeric pressure sensitive adhesive tapes are economical and adaptable to many different applications. One primary example is as floor marking in industrial and factory environments. However, there are several disadvantages to using such tape in industrial settings. One disadvantage is that the tape lacks sufficient strength and hardness to prevent wearing, tearing, cracking-and-breakage from heavy and repeated traffic, such as from forklift trucks. Similarly, as a result of poor adhesive quality, repeated traffic has a tendency to detach many commercially available tapes from the floor. Another disadvantage is that the aesthetic qualities and physical properties of the tape are diminished from scuffing, scratching, and the like. Such disadvantages plague existing polymeric pressure sensitive adhesive tapes. Because of these disadvantages that have been associated with polymeric pressure sensitive adhesive tape, wide industry acceptance has been historically difficult to achieve.

Accordingly, many opt to rely on the time consuming and exacting practice of painting.

In view of the above discussion, it is an advantage of the present invention to provide a polymeric adhesive tape that has superior ductility, strength, tear resistance and abrasion resistance. Other advantages of the present invention will be apparent from the following detailed description.

SUMMARY OF INVENTION

According to one embodiment, an adhesive tape is provided. The tape has a first layer of polymeric material having a Shore A Hardness of between 92 and 100 and a thickness of between .020" and .065", and a second layer of adhesive. Preferably, the adhesive is of a pressure sensitive type.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a cross-sectional view illustrating the embodiment of a polymeric pressure sensitive adhesive tape.

DETAILED DESCRIPTION OF THE INVENTION

The adhesive tape of this invention usually comprises a layer of polymeric material and at least one layer of adhesive material. The pressure-sensitive adhesive tape of this invention is not limited to having only the above layers of polymeric material and layer of pressure-sensitive adhesive material. It may optionally have an additional layer, such as a laminating substrate on an outermost side of the above adhesive layer. The laminating substrate is usually

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peeled off and thrown away when pressure-sensitive adhesive tape is actually used. Therefore, inexpensive materials are preferred, however, there are no particular limitations on the materials used for the laminating substrate.

Figure 1 is an example of the pressure-sensitive adhesive tape of this invention wherein a layer of polymeric material (1) is attached to the top side of a layer of pressure-sensitive adhesive material (2) and a laminating substrate (3) is attached to the bottom side of the pressure-sensitive adhesive material. Upon removal of the laminating substrate (3), the tape can be applied to a floor (4) with the application of pressure.

The pressure-sensitive adhesive tape of this invention can be produced in a variety of lengths, widths, and thickness. A variety of colors can also be used for the outer surface of the layer of polymeric material (1). For example, safety yellow can be used for aisle markings, or red can be used for quarantine and reject markings in a production facility. Coloring can be achieved by introducing a colorant in any form, including pigments and dyes into the polymeric material.

The adhesive employed in layer material (3) may be any of those heretofore employed in the art for preparing adhesive structures. By way of illustration, suitable adhesives of this general description include those disclosed in U.S. Pat. No. 5,061,559, herein incorporated by reference.

The layer of polymeric material (1) may be a durable polymer such as polyvinyl chloride, polycarbonate, or a terpolymer comprised of acrylonitrile, butadiene and styrene or the like. A clear or tinted polyvinyl chloride is a preferred material. The polymer selected must have Shore A Hardness between, for example, 92-100, and preferably between 93-97. The outer surface of the

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layer of polymeric material (1) is preferably textured. The layer of polymeric material (1) may have a thickness of about, for example, .020" to .065".

Advantageously, this embodiment of the invention provides improved tear resistance, strength, and abrasion resistance by employing the sum or all of the combination of polymer selected, Shore A Hardness, textured surface, and layer thickness.

EXAMPLES

One embodiment of the invention will be described below in greater detail through the following examples.

Test samples were performed on a 4" wide sample of the pressure sensitive adhesive tape of this invention. The example tape was constructed of a semi-rigid 95A polyvinyl chloride from Artemis Industries, 2550 Gilcrest Rd, Akron Oh 44305 which was extruded from a 2½" diameter NRM extrusion machine at 360-380 °F at an extrusion rate of 400 ft per hour to yield a .065 thick, 4" wide layer. A textured first surface of the extruded polymer layer was achieved by following the above process parameters. During extrusion a rubberized double sided carpet tape (Product # 591B) from International Tape Co., P.O. Box 240, 6 Industrial Drive, Windham, NH 03087 was applied to a second side of the extruded polymer layer. A tape from Windmill Tapes of Great Britain (www.windmilltapes.com) was used for comparison purposes. Test samples were conditioned at 73 ± 3°F and 50 ± 5% relative humidity for at least 24 hours prior to testing.

Tensile strength at yield point was determined according to ASTM D 882 testing method. A 0.5" x 8" sample was prepared and placed in the jaws of the

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instrument at a separation of 4.0". The tester was started at a separation rate of 2.0 in/min. At the instance the tape yielded the force was recorded. Five replicates of each sample were conducted and the results were normalized to pounds per inch width. Results indicate higher yield point and higher absolute forces involved at yield point for the pressure sensitive adhesive tape of this invention. Particularly, the yield point in both machine and traverse direction were respectively, on average, 3,176 lb/in² and 3,136 lb/in².

Tear resistance was determined according to the ASTM D 1004 test method. The samples were die cut according to the method. The liner from the sample was removed and the sample was placed in the jaws of the tester at a separation of one inch. The tester was started at a rate of 2.0 in/min. The maximum force encountered during testing was recorded. Five replicates of each sample in both the machine and traverse direction were tested. Results indicate substantially improved tear strength in both the machine and traverse directions for the pressure sensitive adhesive tape of this invention. Particularly, the tear strength in both machine and traverse direction was respectively, on average, 22.3 lb and 22.1 lb.

Caliper or thickness was determined according to the PSTC-33 method. Caliper of the material was determined both with and without the liner. Ten replicates of each sample were measured. Results indicate substantially increased thickness of the pressure sensitive adhesive tape of this invention, partly because of the inherent characteristics of the semi-rigid surface. Particularly, the thickness of the material, with and without the liner, was respectively, on average, 68.4 mil and 65.4 mil.

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Peel adhesion was tested according to a modified PSTC-101D method. The modification included dwell time. Peel adhesion is a measure of the strength of the adhesive bond between the tape and the test surface. Exactly one (1.0) inch wide samples were applied to a standard stainless steel test panel at a rate of 24 in/min with a 4.5 pound rubber covered roller according to the method. The tape was then peeled from the substrate at a 90° angle after a dwell time of one hour. The force required for removal was measured. Five replicates of each sample were tested. Results indicate substantially increased peel adhesion for the pressure sensitive adhesive tape of this invention when applied to stainless steel. Particularly, the peel adhesion of this material was, on average, 5.2 lb/in width.

Abrasion resistance was determined according to a modified ASTM D 5264 test method. The material was cut to a 2.5" x 6" size. A new 2" x 4" piece of standard A-5 receptor material (moderate abrasive) from Gavarti Associates Ltd. was affixed with double-sided tape to the four pound instrument weight (0.5 lb/in² load). This in turn was placed over the test sample. The instrument was set for 100 strokes and operation was initiated. The instrument strikes an arc with the abrasive over the test material. Each stroke consists of one motion back and forth over the sample. When the cycles were completed the weighted abrasive was lifted and the test sample removed. At the conclusion of the test the overall quality of each sample was evaluated relatively for scratch resistance. Results indicate that the abrasion resistance of the pressure sensitive adhesive tape of this invention is improved over the comparative tape.

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Results obtained were as follows:

	Average	σ (standard deviation)	N (test numbers)
Tensile at Yield at 2.0 in/min, lb/in²			
Inventive Sample Machine Direction	3,176	152	5
Inventive Sample Traverse Direction	3,136	56	5
Comparative Sample Machine Direction	2,400	160	5
Comparative Sample Transverse Direction	1,720	120	5
Tear at 2.0 in/min, lb.			
Inventive Sample Machine Direction	22.3	1.6	5
Inventive Sample Traverse Direction	22.1	0.4	5
Comparative Sample Machine Direction	2.2	0.1	5
Comparative Sample Transverse Direction	1.6	0.1	5
Caliper, mil.			
Inventive Sample With Liner	68.4	0.5	10
Inventive Sample Without Liner	65.4	0.5	10
Comparative Sample	5.5	0.04	10
Adhesion to Stainless lb/in width			
Inventive Sample	5.2	0.5	5
Comparative Sample	1.7	0.03	5
Abrasion Resistance			
Inventive Sample	Excellent – no sign of damage		
Comparative Sample	Fair – moderate damage		

Since certain changes may be made without departing from the scope of the invention herein involved, it is intended that all matter described in the foregoing description, including the examples, shall be interpreted as illustrative and not in a limiting sense.

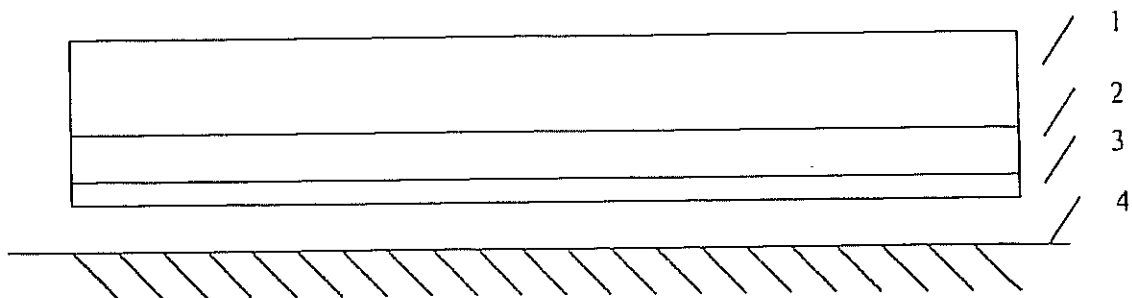
Attorney Docket No. GOEC 2 00001

What is claimed is:

1. An adhesive tape comprising:
 - (1) a polymer layer having a Shore A Hardness of between about 92 and 100; and
 - (2) a layer of adhesive attached to said first polymer layer.
2. The adhesive tape of claim 1, further comprising a substrate attached to outermost side of said second layer.
3. The adhesive tape claim of claim 1, wherein said polymer layer includes a textured surface.
4. The adhesive tape of claim 1, wherein said polymer layer is comprised of a polyvinyl chloride.
5. The adhesive tape of claim 1, wherein said polymer layer includes coloring pigment.
6. The adhesive tape claim of claim 4, wherein said polyvinyl chloride comprises a clear polymer.
7. The adhesive tape claim of claim 1, wherein said pressure sensitive adhesive comprises a rubberized double-sided tape.
8. The adhesive tape claim of claim 1, wherein said first layer has a thickness of between about .020" to .065
9. The adhesive tape claim of claim 1, wherein said first layer has a Shore A Hardness of between about 93 and 97.
10. The adhesive tape of claim 1, wherein said adhesive is pressure sensitive.

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FIGURE 1



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DECLARATION AND POWER OF ATTORNEY FOR PATENT APPLICATION

As a below inventor, I hereby declare that:

My residence, post office address and citizenship are as stated below next to my name,

I believe I am the original, first and sole inventor (if only one name is listed below) or an original, first and joint inventor (if plural names are listed below) of the subject matter which is claimed and for which a patent is sought on the invention entitled:

PRESSURE SENSITIVE ADHESIVE TAPE FOR FLOOR MARKING

the specification of which ☒ was filed on
☒ is attached hereto Application Serial No. and was amended on
(if applicable)

☐ was filed _____.

I hereby state that I have reviewed and understand the contents of the above-identified specification, including the claims, as amended by any amendment referred to above.

I acknowledge the duty to disclose information which is material to the examination of this application in accordance with Title 37, Code of Federal Regulations, § 1.56 (a).

I hereby claim foreign priority benefits under Title 35, United States Code, § 119 or 365(b) of any foreign application(s) for patent or inventor's certificate, or 365(a) of any PCT international application which designated at least one country other than the United States of America, listed above and have also identified below, by check the box, any foreign application(s) for patent or inventor's certificate, or of any PCT international application having a filing date before that of the application on which priority is claimed:

Prior Foreign Application (Number)	(Country)	(Day/Month/Year Filed)	Certified Copy Attached?
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I hereby claim the benefit under 35 U.S.C. 119(e) of any United States provisional application(s) listed below.

☐ additional provisional application numbers are
Application No(s) (Day/Month/Year Filed) listed on a supplemental priority data sheet attached

I hereby claim the benefit under Title 35, United States, § 120 of any United States application(s) or any PCT international application designating the United States of America, listed below and, insofar as the subject matter of each of the claims of this application is not disclosed in the prior United States application or PCT International application in the manner provided by the first paragraph of Title 35, United States Code, § 112, I acknowledge the duty to disclose material information which is material to patentability as defined in Title 37, of Federal Regulations Code, § 1.56(a) which became available between the filing date of the prior application and the national or PCT international filing date of this application:

U.S. Parent Application or PCT Parent Number	Parent Filing Date (MM/DD/YYYY)	Parent Patent Number (If Applicable)
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Attorney Docket No. GOEC 2 00001

POWER OF ATTORNEY: As a named inventor, I hereby appoint the following attorney(s) and/or agent(s) to prosecute this application and transact all business in the Patent and Trademark Office connected therewith.

Mark E. Bandy,	Reg. No. 35,788	Richard J. Minnich,	Reg. No. 24,175
Alan C. Brandt,	Reg. No. 50,218	Jay F. Moldovanyi,	Reg. No. 29,678
John P. Cornely,	Reg. No. 41,687	Philip J. Moy,	Reg. No. 31,280
Kent E. Daniels,	Reg. No. 19,598	Timothy E. Nauman,	Reg. No. 32,283
Joseph D. Dreher,	Reg. No. 37,123	Erik J. Overberger,	Reg. No. 48,556
Matthew P. Dugan,	Reg. No. 44,663	Sue E. Phillips,	Reg. No. 32,046
Christopher B. Fagan,	Reg. No. 22,987	Patrick R. Roche,	Reg. No. 29,580
Patrick D. Floyd,	Reg. No. 39,671	James E. Scarbrough,	Reg. No. 47,056
Jude A. Fry,	Reg. No. 38,340	Ann M. Skerry,	Reg. No. 45,655
Steven M. Haas,	Reg. No. 37,841	Mark S. Svot,	Reg. No. 34,261
Michael E. Hudzinski,	Reg. No. 34,185	Brian E. Tuning,	Reg. No.
Richard M. Klein,	Reg. No. 33,000	35,394	
Thomas E. Kocovsky, Jr.,	Reg. No. 28,383	Gregory S. Vickers,	Reg. No. 45,180
Sandra M. Koenig,	Reg. No. 33,722	Robert V. Vickers,	Reg. No. 19,504
Scott A. McCollister,	Reg. No. 33,961	Joseph E. Waters,	Reg. No. 50,427
James W. McKee,	Reg. No. 26,482	Thomas E. Young,	Reg. No. 28,924
		John S. Zanghi,	Reg. No. 48,843

<p>SEND CORRESPONDENCE TO:</p> <p>Scott A. McCollister</p> <p>Fay, Sharpe, Fagan, Minnich & McKee, LLP</p> <p>1100 Superior Avenue, 7th Floor</p> <p>Cleveland, OH 44114-2518</p>	<p>DIRECT TELEPHONE CALLS TO:</p> <p>(name and telephone number)</p> <p>Scott A. McCollister</p> <p>(216) 861-5582</p>
---	--

I hereby declare that all statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both under ☐ 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patent issuing thereon.

Full name of sole or first joint inventor: Thomas R. Goecke

Inventor's Signature: Thomas R. Goecke Date: September 26, 2003

Residence: 3984 Idlewild Drive, Rocky River, Ohio

Country of Citizenship: US

Post Office Address: 3984 Idlewild Drive
Rocky River, OH 44116

PATENT APPLICATION SERIAL NO. _____

U.S. DEPARTMENT OF COMMERCE
PATENT AND TRADEMARK OFFICE
FEE RECORD SHEET

10/03/2003 FFANAEIA 00000061 10674108

01 FC:2001

375.00 DP

PTO-1556
(5/87)

PATENT APPLICATION FEE DETERMINATION RECORD Effective January 1, 2003

Application or Docket Number

10674108

CLAIMS AS FILED - PART I

(Column 1)

(Column 2)

TOTAL CLAIMS	10	
FOR	NUMBER FILED	NUMBER EXTRA
TOTAL CHARGEABLE CLAIMS	10 minus 20 = *	0
INDEPENDENT CLAIMS	10 minus 3 = *	7
MULTIPLE DEPENDENT CLAIM PRESENT <input type="checkbox"/>		

* If the difference in column 1 is less than zero, enter "0" in column 2

SMALL ENTITY
TYPE ☐OR OTHER THAN
SMALL ENTITY

RATE	FEE
BASIC FEE	375.00
X\$ 9=	
X42=	
+140=	
TOTAL	375

RATE	FEE
BASIC FEE	750.00
X\$18=	
X84=	
+280=	
TOTAL	

CLAIMS AS AMENDED - PART II

(Column 1)

(Column 2)

(Column 3)

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**
	Independent	*	Minus	***
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

SMALL ENTITY OR

OTHER THAN
SMALL ENTITY

RATE	ADDITIONAL FEE
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X42=	
+140=	
TOTAL	
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RATE	ADDITIONAL FEE
X\$18=	
X84=	
+280=	
TOTAL	
ADDIT. FEE	

(Column 1)

(Column 2)

(Column 3)

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**
	Independent	*	Minus	***
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

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TOTAL	
ADDIT. FEE	

RATE	ADDITIONAL FEE
X\$18=	
X84=	
+280=	
TOTAL	
ADDIT. FEE	

(Column 1)

(Column 2)

(Column 3)

AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT		HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
	Total	*	Minus	**
	Independent	*	Minus	***
	FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM <input type="checkbox"/>			

RATE	ADDITIONAL FEE
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RATE	ADDITIONAL FEE
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+280=	
TOTAL	
ADDIT. FEE	

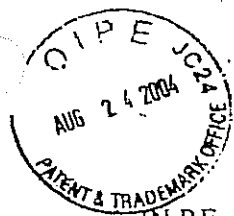
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20."

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3."

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

IFW



PATENT
IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF : Goecke.
FOR : PRESSURE SENSITIVE ADHESIVE TAPE
FOR FLOOR MARKING
SERIAL NO. : 10/674,108
FILED : September 29, 2003
ART UNIT : 1772
ATTORNEY DOCKET NO. : GOEC 2 00001

INFORMATION DISCLOSURE STATEMENT UNDER 37 C.F.R. § 1.97(c)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Dear Sir:

In accordance with 37 C.F.R. §§ 1.56, 1.97, 1.98 and MPEP § 609, Applicant submits the following Disclosure Statement concerning art of which the Applicant is aware. A copy of PTO-1449 is enclosed herewith.

This Information Disclosure Statement is not intended to constitute an admission that any patent, publication or other information referred to herein or submitted herewith is "prior art" for this invention unless specifically designated as such.

In accordance with 37 C.F.R. §1.97(g) and (h), the filing of this Information Disclosure Statement shall not be construed to mean that a search has been made or that no other material information as defined in 37 C.F.R. §1.56(b) exists.

Under § 1.98(a)(3), no concise explanation of relevance is required for information that is in the English language.

5,061,559 – Ogusi et al.
5,246,773 – Mamish
5,496,636 – Gu et al.
6,036,997 – Ragland et al.
6,245,382 – Shvartsman et al.
6,277,468 – Nakamoto et al.
6,509,084 – Sturtevant et al.

CERTIFICATE OF MAILING

I hereby certify that this INFORMATION DISCLOSURE STATEMENT is being deposited with the United States Postal Service as FIRST CLASS MAIL in an envelope addressed to the Commissioner for Patents, Alexandria, VA 22313-1450, on 8/18/04

By:

Georg B. Sonntag
Georg B. Sonntag

Other Art:

High Quality Tapes and Labels, Windmill Tapes – Industrial PVC Tapes,
<http://www.windmilltapes.com> Product Data Sheet

Under Rule 97(b)(3), this information disclosure statement is being filed before the mailing date of a first Office Action on the merits and accordingly no fee is necessary.

OG Notice August 5, 2003

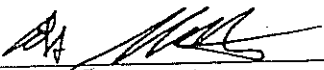
The Office has waived the requirement under 37 CFR §1.98(a)(2)(i) that copies of cited U.S. patent documents be submitted in connection with all applications filed on or after June 30, 2003. As such, copies of the U.S. patent documents cited herein have not been included.

It is respectfully requested that the attached documents be considered and officially cited in examination of this application.

Respectfully submitted,

FAY, SHARPE, FAGAN,
MINNICH & McKEE, LLP

Date: August 18, 2004



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1100 Superior Avenue, Seventh Floor
Cleveland, Ohio 44114-2518
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Page 1 of 1

Subst. Form PTO-1449

Atty. Docket No.: GOEC 2 00001

Serial No.: 10/674,108

**APPLICANT(S) INFORMATION
DISCLOSURE STATEMENT**

Applicant(s): Goecke

Filing Date: September 29, 2003

Group: 1772

U.S. PATENT DOCUMENTS

Initial*		Document No.	Date	Name	Class	Subcl.	Filing Date
	AA	5,061,559	29OC1991	Ogusi et al.			
	AB	5,246,773	21SE1993	Mamish			
	AC	5,496,636	05MR1996	Gu et al.			
	AD	6,036,997	14MR2000	Ragland et al.			
	AE	6,245,382	12JE2001	Shvartsman et al.			
	AF	6,277,468	21AU2001	Nakamoto et al.			
	AG	6,509,084	21JA2003	Sturtevant et al.			
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subcl.	Translation?
	AL						
	AM						
	AN						
	AO						
	AP						
	AQ						

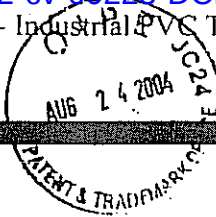
OTHER ART

	AR	High Quality Tapes and Labels, Windmill Tapes – Industrial PVC Tapes, http://www.windmilltapes.com Product Data Sheet
	AS	
	AT	
	AU	

Examiner:

Date Considered:

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if in conformance and not considered. Include copy of this form with next communication to applicant.

**Industrial PVC Tapes**

----- Please Select Here for Windmill Product Range -----

Industrial PVC Tapes

Floor Marking Tape

The modern way to mark out factory floors, sportshalls, canteens etc. The tapes are available in a range of colours and stripes to help with the designation of areas. The tapes are very long lasting and much easier and cleaner to apply than paints.

PVC Pipewrap

Used to:- Protect joints, elbows from external corrosion.
Resistant to: -

- Acids
- Alkalis
- Various effluents
- Abrasives

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	GOEC 2 00001	2438
27885	7590	03/21/2005	EXAMINER	
FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP			AHMAD, NASSER	
1100 SUPERIOR AVENUE, SEVENTH FLOOR			ART UNIT	
CLEVELAND, OH 44114			PAPER NUMBER	

1772

DATE MAILED: 03/21/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/674,108	Applicant(s) GOECKE, THOMAS R.	
	Examiner Nasser Ahmad	Art Unit 1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 September 2003.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date <u>8/24/04</u> . | 6) <input type="checkbox"/> Other: _____ |

Application/Control Number: 10/674,108

Page 2

Art Unit: 1772

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 the phrase "said first polymer" is found to be indefinite for lack of antecedent basis.

Claim 2, the phrase "said second layer" is deemed to be indefinite for lack of antecedent basis. It is not clear as to which layer is referred to by said phrase.

Claims 8 and 9, the phrase "said first layer" is found to be indefinite for lack of antecedent basis. It is unclear as if said phrase refers to a layer that is different from the "first polymer layer" as recited in claim 1 or not.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Condon (5686170).

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Page 3

Art Unit: 1772

Condon relates to an adhesive tape comprising a polymer layer (12) such as polyvinyl chloride having a Shore hardness of greater than 65 and a layer of adhesive (30) attached to the first polymer layer (assumed by the examiner to be the polyvinyl chloride layer). The tape has a substrate (26) attached to the outermost side of the second layer (which is assumed by the examiner to be the adhesive layer). As mentioned above, the polymer layer comprises polyvinyl chloride (PVC), including a textured surface (col. 5, lines 40-54). The polymer layer includes coloring pigment (col. 5, lines 55-60). The PVC (12) layer can be clear or transparent (col. 5, lines 40-42) and has a thickness of 0.001 to 0.025 inches (col. 5, lines 24-26). The adhesive can be pressure sensitive adhesive (PSA) (col. 6, lines 60-61) and the adhesive layer is known to exhibit double-sided adhesive tape.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

5. Claims 1-7 and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Ungar (6440538).

Ungar relates to an adhesive tape comprising a base layer (10) of polyvinyl chloride (PVC) having a Shore hardness of 50 –100 (col. 7, lines 47-54) and a layer of adhesive (9) attached to said layer (10). A top wear resistant layer (5) is attached to the outermost side of the adhesive layer. The adhesive can be rubberized pressure sensitive adhesive and is a double-sided adhesive tape because the adhesive layer would have two adhesive surfaces on opposite sides thereof. The base layer includes

Application/Control Number: 10/674,108

Page 4

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fillers, additives, carbon black, etc. (col. 7, lines 64-67) which would provide for a textured surface and impart color thereto as desired. The thickness of the PVC can be 2.4 mm.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Condon in view of Ungar.

Condon, as discussed above, fails to teach that the PSA can be rubberized. Ungar, also discussed above, teaches the advantage of using rubberized PSA for providing adhesion compatibility between the layers and for its waterproof property (col. 8, lines 14-19). Therefore, it would have been obvious to one having ordinary skill in the art to utilize Ungar's teaching of using rubberized PSA as the adhesive layer in the invention of Condon with the motivation to provide for waterproof property when attached to a surface and its adhesive compatibility for durable adhesion.

Information Disclosure Statement

8. The references cited in the IDS submitted on August 24, 2004 have been considered except for the article titled "High Quality Tapes and Labels" for lack of its

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Page 5

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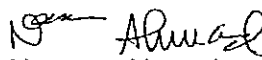
published date. Hence, the article has been penciled out in the attached PTO-1449 form.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nasser Ahmad whose telephone number is 571-272-1487. The examiner can normally be reached on 7:30 AM to 5:00 PM, and on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Nasser Ahmad
Primary Examiner
Art Unit 1772

N. Ahmad.
March 16, 2005.



Page 1 of 1

Subst. Form PTO-1449 APPLICANT'S(S) INFORMATION DISCLOSURE STATEMENT	Atty. Docket No.: GOEC 2 00001	Serial No.: 10/674,108
	Applicant(s): Goecke	
	Filing Date: September 29, 2003	Group: 1772

U.S. PATENT DOCUMENTS

Initial*		Document No.	Date	Name	Class	Subcl.	Filing Date
NA	AA	5,061,559	29OC1991	Ogusi et al.			
	AB	5,246,773	21SE1993	Mamish			
	AC	5,496,636	05MR1996	Gu et al.			
	AD	6,036,997	14MR2000	Ragland et al.			
	AE	6,245,382	12JE2001	Shvartsman et al.			
	AF	6,277,468	21AU2001	Nakamoto et al.			
NA	AG	6,509,084	21JA2003	Sturtevant et al.			
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subcl.	Translation?
	AL						
	AM						
	AN						
	AO						
	AP						
	AQ						

OTHER ART

	AR	High Quality Tapes and Labels, Windmill Tapes - Industrial PVC Tapes, http://www.windmilltapes.com Product Data Sheet
	AS	
	AT	
	AU	

Examiner:

N. Ahmad

Date Considered:

3.15.05

* EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if in conformance and not considered. Include copy of this form with next communication to applicant.

Notice of References Cited

Application/Control No.

10/674,108

Applicant(s)/Patent Under
Reexamination
GOECKE, THOMAS R.

Examiner

Nasser Ahmad

Art Unit

1772

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-6,440,538 b1	08-2002	Ungar, Israel S.	428/195.1
	B	US-5,686,170	11-1997	Condon et al.	428/207
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
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	P					
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	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims



Application No.

10/674,108

Examiner

Nasser Ahmad

Applicant(s)

GOECKE, THOMAS R.

Art Unit

1772

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted


N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date											
Final	Original	3/16/05											
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Search Notes 	Application No.	Applicant(s)	
	10/674,108	GOECKE, THOMAS R.	
	Examiner	Art Unit	
	Nasser Ahmad	1772	

[illegible]

INTERFERENCE SEARCHED			
Class	Subclass	Date	Examiner

[illegible]

WEST Search History

DATE: Tuesday, March 15, 2005

Hide?	Set Name	Query	Hit Count
		<i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>	
<input type="checkbox"/>	L27	l24 same L26	3
<input type="checkbox"/>	L26	double\$1sided or double\$1faced	40109
<input type="checkbox"/>	L25	l18 same L24	2
<input type="checkbox"/>	L24	l9 same L23	1212
<input type="checkbox"/>	L23	l3 near6 L22	55882
<input type="checkbox"/>	L22	rubber\$4 or elastomer\$4	1391033
<input type="checkbox"/>	L21	l15 same L20	1
<input type="checkbox"/>	L20	l3 same L19	48
<input type="checkbox"/>	L19	l9 same L18	547
<input type="checkbox"/>	L18	shore near3 A	21134
<input type="checkbox"/>	L17	l5 same L16	29
<input type="checkbox"/>	L16	l9 same L15	3182
<input type="checkbox"/>	L15	textur\$4 or emboss\$4	281643
<input type="checkbox"/>	L14	l12 and L13	0
<input type="checkbox"/>	L13	428/40.1.ccls.	1852
<input type="checkbox"/>	L12	l3 same L11	42
<input type="checkbox"/>	L11	l5 with l9	342
<input type="checkbox"/>	L10	l7 same L9	8
<input type="checkbox"/>	L9	polyvinyl near3 chloride	154199
<input type="checkbox"/>	L8	polyvinylnear3 chloride	0
<input type="checkbox"/>	L7	l3 same L6	151
<input type="checkbox"/>	L6	polymer with L5	2302
<input type="checkbox"/>	L5	shore with hardness	32915
<input type="checkbox"/>	L4	l2 and L3	4
<input type="checkbox"/>	L3	adhesive	1067918
<input type="checkbox"/>	L2	goecke.in.	114
<input type="checkbox"/>	L1	goecke-thomas.in.	0

END OF SEARCH HISTORY



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	PATENT NUMBER	GROUP ART UNIT	FILE WRAPPER LOCATION
10/674,108		1772	

Change of Address/Power of Attorney

The following fields have been set to Customer Number 27885 on 02/28/2005

- Correspondence Address
- Power of Attorney
- Maintenance Fee Address

The address of record for Customer Number 27885 is:

FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP
1100 SUPERIOR AVENUE, SEVENTH FLOOR
CLEVELAND, OH 44114

The Practitioners of record for Customer Number 27885 are:

PTO INSTRUCTIONS:

Please take the following action when the correspondence address has been changed to a customer number:

- 1) Add 'ADDRESS CHANGE TO CUSTOMER NUMBER' on the next available content line of the File Jacket.
- 2) Put a line through the old address on the File Jacket and enter the Customer Number as the new address.
- 3) File this Notice in the File Jacket.

Please take the following action when the correspondence address has NOT been changed:

- 1) File this Notice in the File Jacket



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
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 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	GOEC 2 00001	2438
27885	7590	07/06/2005	EXAMINER	
FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP 1100 SUPERIOR AVENUE, SEVENTH FLOOR CLEVELAND, OH 44114			AHMAD, NASSER	
			ART UNIT	PAPER NUMBER
			1772	

DATE MAILED: 07/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Interview Summary	Application No.	Applicant(s)	
	10/674,108	GOECKE, THOMAS R.	
	Examiner	Art Unit	
	Nasser Ahmad	1772	

All participants (applicant, applicant's representative, PTO personnel):

(1) Nasser Ahmad.

(3) Travis Ribar.

(2) W. Scott Harders.

(4) _____.

Date of Interview: 29 June 2005.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☒ No.
If Yes, brief description: _____.

Claim(s) discussed: ALL.


Identification of prior art discussed: Condon, Ungar.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: See Continuation Sheet.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN ONE MONTH FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.


NASSER AHMAD
PRIMARY EXAMINER

Examiner Note: You must sign this form unless it is an Attachment to a signed Office action.

Examiner's signature, if required

Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

Continuation Sheet (PTOL-413)

Application No. 10/674,108

Continuation of Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Examiner discussed that the prior art is directed to a polymer film with an adhesive layer which would function as an adhesive tape and hence, are not non-analogous. Applicant concern about "directly attached", tape being flexible, and the negative phrase in claim 12 , etc. were addressed. Applicant was informed that, in the absence of any showing of Shore A Hardness in Condon, it will be withdrawn when the response is filed. Further, newly proposed clais 11 and 12 would overcome Condon. Applicant agreed to submit the abstract in a separate page. A copy of the proposed amendment is attached for the file.

In re Goecke

10/674,108

Filed: 9/29/2003

Amendment A and Response to Office Action Dated March 21, 2005

IN THE SPECIFICATION:

Please amend the Title as follows:

~~PRESSURE SENSITIVE ADHESIVE TAPE FOR FLOOR MARKING~~

In re Goecke

10/674,108

Filed: 9/29/2003

Amendment A and Response to Office Action Dated March 21, 2005

Please amend the Abstract as follows:

The ~~pressure-sensitive~~ adhesive tape of this ~~invention~~ application comprises a ~~first~~ layer of polymeric material, particularly a polyvinyl chloride, having a Shore A Hardness of between 92 and 100 and a ~~second~~ layer of adhesive material attached to a surface of the layer of polymeric material.

In re Goecke

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IN THE CLAIMS:

1. (currently amended) An adhesive tape comprising: (1) a polymer layer having a Shore A Hardness of between about 92 and 100 and a thickness of between about 0.020" to 0.065"; and (2) a layer of adhesive attached to said first polymer layer.
2. (currently amended) The adhesive tape of claim 1, further comprising a substrate attached to an outermost side of said ~~second~~ layer of adhesive.
3. (original) The adhesive tape claim of claim 1, wherein said polymer layer includes a textured surface.
4. (original) The adhesive tape of claim 1, wherein said polymer layer is comprised of a polyvinyl chloride.
5. (original) The adhesive tape of claim 1, wherein said polymer layer includes coloring pigment.
6. (original) The adhesive tape claim of claim 4, wherein said polyvinyl chloride comprises a clear polymer.
7. (currently amended) The adhesive tape claim of claim 1, wherein said ~~pressure-sensitive~~ adhesive comprises a rubberized double-sided tape.
8. cancelled

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9. (currently amended) The adhesive tape claim of claim 1, wherein said ~~first~~ polymer layer has a Shore A Hardness of between about 93 and 97.

10. (original) The adhesive tape of claim 1, wherein said adhesive is pressure sensitive.

11. (new) An adhesive tape comprising:

a polymer layer having a Shore A Hardness of between about 92 and 100; and

a layer of pressure sensitive adhesive comprising a first side and an opposed second side, the first side being in direct and uninterrupted contact with the polymer layer where the adhesive tape comprises an average thickness between 65 mil and 69 mil.

12. (new) An adhesive tape for application to a flooring environment comprising:

a polymer layer having a Shore A Hardness between 92 and 100 and a thickness between 0.020" and 0.065", the polymer layer defining a first side; and

a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment;

where adhesive tape has a peel adhesion greater than 2.0 lb/in width .

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REMARKS

Applicant wishes to thank the Examiner for the consideration given this case to date and the courtesy of the telephone interview conducted June 29, 2005. Applicant has now had an opportunity to carefully consider the Examiner's action, and respectfully submits that the application, as amended, is now in condition for allowance. As filed, claims 1-10 were pending. With the amendments above, claims 1 – 7 and 9 – 12 remain pending.

THE EXAMINER'S ACTION

In the Office Action dated March 16, 2005, the Office:

1) rejected claims 1-10 under 35 U.S.C. § 112, second paragraph as being indefinite for failing to particularly point out and distinctly claim the subject matter of the claimed invention;

2) rejected claims 1-6 and 8-10 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,686,170 to Condon et al. ("Condon");

3) rejected claims 1-7 and 9-10 under 35 U.S.C. § 102(e) as being anticipated by U.S. Patent No. 6,440,538 to Ungar ("Ungar "); and

4) rejected claims 1-10 under 35 U.S.C. § 103(a) as being unpatentable over Condon in light of Ungar.

THE TELEPHONIC INTERVIEW CONDUCTED JUNE 29, 2005

In accordance with MPEP section 713.04 the following summary is provided:

(A) a brief description of the nature of any exhibit shown or any demonstration conducted.

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Applicant provided a draft response with suggested claim language to overcome the rejections of record.

(B) identification of the claims discussed.

All claims including versions of newly presented claims were discussed.

(C) identification of specific prior art discussed.

The prior art applied to the claims in the Office Action dated March 21, 2005 was discussed.

(D) identification of the principal proposed amendments of a substantive nature discussed.

The principal proposed amendments include the attachment of a polymer layer to an adhesive layer and whether "attached" means "directly attached". Agreement was not reached.

(E) the general thrust of the principal arguments of the applicant and the examiner.

The applicant argued that the references were non-analogous in the first instance and that they failed to teach the limitations claimed. Specifically, Condon failed to teach at least the Shore A Hardness scale, and Ungar failed to teach that the wear resistant layer was removable. The Examiner advised that he would review the Shore scales and potentially withdraw Condon based on the findings, and that although unpersuaded by the verbal arguments against Ungar, he would consider written remarks on the subject.

(F) a general indication of any other pertinent matters discussed.

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None.

(G) the general results or outcome of the interview.

Agreement was not reached on the allowability of the claims.

AMENDMENT TO THE SPECIFICATION

Applicant's amendments to the TITLE and ABSTRACT are believed to more closely align these portions of the specification with the claims and are not believed to introduce any new matter.

AMENDMENTS TO THE CLAIMS AND NEWLY ADDED CLAIMS

Applicant's amendments and newly added claims are intended to clarify the structure that Applicant claims, cure antecedent basis problems, and correct minor typographical errors. Support for these amendments may be found in Figure 1 and in the specification. Support for the newly added claims may be found in the originally filed claims, Figure 1, and the specification including the chart at numbered paragraph 0018. These amendments are not believed to introduce new matter.

REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

Applicant has amended the claims noted and now believes that the rejections under 35 U.S.C. § 112, second paragraph have been overcome. Re-consideration and withdrawal of the rejection in light of the amendments above is respectfully requested.

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REJECTIONS UNDER 35 U.S.C. § 102(b):

Claims 1-6 and 8-10 are not anticipated by Condon

Condon fails to anticipate the current claims because it discloses and teaches a multilayered sign blank – art unique and distinct from Applicant's claimed adhesive tape. Even if the multilayered sign blank in Condon does contain a layer of adhesive that permits the multilayered sign blank to be adhered to a substrate, the mere presence of that adhesive does not transform the multilayered sign blank into an adhesive tape. Further, there is no disclosure or teaching within Condon to indicate that its multilayered sign blank is or may be construed to be an adhesive tape as claimed by Applicant. Condon therefore is non-analogous art vis-à-vis Applicant's claims directed to an adhesive tape and, as such, the rejection is improper and should be withdrawn.

The Office will appreciate that "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference" (MPEP § 2131).

Condon also fails to anticipate the claims. For example, claim 1 calls for an adhesive tape comprising a polymer layer and a layer of adhesive attached to that polymer layer. Condon fails to teach or fairly disclose this structure. Specifically, the Office concludes that Condon's disclosure of a polymer layer (12) and an adhesive layer (30) anticipates these elements. Closer inspection reveals that the layers taught by Condon are clearly not attached to each other (see Figures 6 and 7 and column 6 lines 14-25, showing that the adhesive layer (30) is not attached to the polymer layer (12), but rather to an intermediate layer (24)). Because the polymer layer and

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the adhesive layer are not attached, Condon fails to anticipate the claims and the rejection should be withdrawn.

Condon also fails to anticipate the Shore hardness requirements of claims 1 and 9.

Applicant's claim 1 clearly calls for a "Shore A Hardness of between about 92 and 100" for the polymer layer within the adhesive tape and claim 9 calls for a "Shore A Hardness of between about 93 and 97" for the polymer layer within the adhesive tape. However, Condon discloses a polymer layer that has a specified Shore D hardness or Shore C hardness (column 5, lines 40-54) and does not disclose any Shore A hardness values of the polymer layer. Should the Office argue equivalency of the different Shore scales, Applicant respectfully requests this be clearly indicated in the record and appropriately supported.

Therefore, Condon fails to anticipate Applicant's claims and the rejections should be withdrawn.

REJECTIONS UNDER 35 U.S.C. § 102(e):

Claims 1-7 and 9-10 are not anticipated by Ungar

Ungar fails to anticipate the current claims because it discloses and teaches an abrasion resistant laminate used to cover countertops and table tops – teachings far removed from Applicant's claimed adhesive tape. There is no disclosure or teaching within Ungar to indicate that its abrasion resistant laminate is or may be construed to be an adhesive tape as recited in the presently pending claims. Ungar therefore fails to anticipate the very nature of Applicant's claimed invention – an adhesive tape – and the rejection should be withdrawn.

Ungar fails to anticipate the claims, as amended. For example, claim 1 calls for a polymer layer having a thickness between about 0.020" to 0.065" attached to a layer of adhesive.

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The Office has conceded that Ungar fails to teach the thickness limitation, thus, Ungar does not anticipate claim 1, and the rejection is believed overcome.

Ungar also fails to anticipate the textured surface requirement of Applicant's claim 3. Ungar notes the use of fillers and additives to the polymer layer in the laminate but makes no mention of the textured nature of the polymer layer's surface. In rejecting Applicant's claim 3, the Office flatly stated a belief that the addition of fillers and additives to a polymer would automatically create a textured surface. However, Applicant discovered no teaching within Ungar that relates to any texture of the polymer layer. In fact, the resultant surface texture of a processed polymer is at least partly dependent upon the processing methods used, and the Office has not shown why the addition of any filler or any additive to a polymer in the present case would automatically create a textured surface. Because there appears to be no support for the Office's position, Applicant respectfully submits that the textured surface in Applicant's claim 3 is not disclosed within or anticipated by Ungar and the rejection should be withdrawn.

Ungar fails to anticipate claims 7 and 10. First, Ungar discloses the use of neither a pressure sensitive adhesive in general nor the specific use of a rubberized double sided tape. Applicant's claim 10 calls for an adhesive tape where the adhesive is a pressure sensitive adhesive. However, though Ungar does contain an adhesive layer, there is no teaching or suggestion that the adhesive layer may be a pressure sensitive adhesive. The Office refers to column 8, lines 14-19 as evidence that Ungar teaches the use of a rubberized pressure sensitive adhesive. However, Applicant respectfully disagrees with this characterization of the reference – the adhesives listed in that section of Ungar are taught to be merely adhesives, not pressure

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sensitive adhesives. Because Ungar does not disclose the use of any pressure sensitive adhesive as the adhesive layer, Ungar does not anticipate claim 10 and the rejection should be withdrawn.

Ungar also fails to anticipate claim 7 reciting that the "adhesive comprises a rubberized double-sided tape." Applicant notes the Office's tortured definition of 'double-sided tape' and respectfully submits that the Office's proposed meaning of 'double-sided tape' is repugnant to that phrase's well known meaning in the art. The Office has taken the position that any adhesive applied to a substrate constitutes "a double-sided tape" because the adhesive has two adhesive surfaces on opposing sides. However, the claims do not call for a double-sided adhesive – rather the claims call for a double-sided tape. As an example definition, a double sided tape includes a substrate having adhesive on opposing or both surfaces. Conversely, by the Office's definition, all adhesive tapes would be double-sided adhesive tapes due to the presence of an adhesive layer which, by itself, has two adhesive surfaces, one of which is attached to the tape's own substrate and the other of which is exposed and allows the tape to adhere to a surface. As this definition renders the term, 'double-sided tape' meaningless, it cannot be correct. Applicant therefore respectfully submits that as the Office's definition of double-sided tape falls, so does the rejection based thereon. Therefore, Ungar does not anticipate claim 7 and the rejection should be withdrawn.

REJECTIONS UNDER 35 U.S.C. § 103(a):

Claims 1-10 are not obvious combinations of Condon in view of Ungar

Claims 1-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Condon in view of Ungar. Because the deficiencies within Condon are not found within Ungar and

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because there is no motivation to combine the references, Applicant requests reconsideration and withdrawal of the present rejection.

The deficiencies in the individual applied references are not cured through their combination. Both Condon and Ungar are nonanalogous art. Applicant's claims are directed toward an adhesive tape. By contrast, Condon discloses a multilayered sign blank while Ungar discloses an abrasion resistant laminate used to cover countertops and table tops. Neither of the references constitutes analogous art to Applicant's adhesive tape. Therefore, their combination does not render the Applicant's invention obvious and the rejection should be withdrawn.

Even were Condon deemed analogous art, its deficiencies would not be cured by the application of the Ungar reference. The Condon reference does not disclose all aspects of Applicant's claimed invention, as discussed above. To cure these deficiencies, the Office relies upon the Ungar reference, which itself does not disclose Applicant's claimed invention, also as discussed above. Specifically, the Office cites the use of a rubberized pressure sensitive adhesive in the Ungar reference and applies the teaching of the use of that rubberized pressure sensitive adhesive to the structure shown by the Condon reference. The Office concludes that this renders Applicant's invention obvious. However, the Ungar reference discloses the use of neither a pressure sensitive adhesive in general nor the specific use of a rubberized double sided tape. Applicant's claim 10 distinctly claims an adhesive tape where the "adhesive is a pressure sensitive adhesive." However, though the Ungar reference does show an adhesive layer, there is no teaching or indication that the adhesive layer may comprise a pressure sensitive adhesive, much less a rubberized pressure sensitive adhesive. The Office points to column 8, lines 14-19 as evidence that the Ungar reference teaches the use of a rubberized pressure sensitive adhesive.

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However, Applicant respectfully disagrees with this characterization of this passage – the adhesives listed in that section of the Ungar reference are taught to be merely adhesives, not pressure sensitive adhesives and not rubberized pressure sensitive adhesives.

Because the Ungar reference does not disclose the use of any pressure sensitive adhesive as the adhesive layer, much less the use of a rubberized pressure sensitive adhesive, and because the Condon reference does not teach the use of any rubberized pressure sensitive adhesive, the Ungar reference does not cure the deficiencies found within the Condon reference and does not render that part of the applicant's invention obvious and the rejection should be withdrawn.

As discussed above, the Ungar reference also fails to disclose the use of a double sided tape as the adhesive layer. Applicant's claim 7 clearly claims an adhesive tape where the adhesive layer "comprises a rubberized double-sided tape." Applicant notes the Office's tortured definition of 'double-sided tape' and respectfully submits that the Office's stated understanding of the meaning of 'double-sided tape' is repugnant to that phrase's well known meaning. The Office stated that any adhesive applied to a substrate constituted a double-sided tape because the adhesive layer had two adhesive surfaces. However, Applicant did not claim a double-sided adhesive – Applicant claimed a double-sided adhesive tape, the well known meaning of which is a tape that has two adhesive opposite surfaces. Conversely, by the Office's definition, all adhesive tapes are double-sided adhesive tapes due to the presence of an adhesive layer which, by itself, has two adhesive surfaces, one of which is attached to the adhesive tape's own substrate and the other of which is open to the atmosphere and allows the adhesive tape to be adhered to an external surface. This definition renders the term, 'double-sided tape' useless and goes against the well known meaning of the term. Applicant therefore respectfully submits that the

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Office's applied definition of double-sided tape is incorrect and that the Ungar reference fails to disclose the use of a double-sided tape as the adhesive layer within an adhesive tape. Because there is no disclosure of the use of a double sided tape as an adhesive layer within the Ungar reference, that reference may not be relied upon to cure the lack of a double sided adhesive tape layer within the Condon reference and the combination of these two references does not render Applicant's invention obvious and the rejection should be withdrawn.

Applicant notes that for an obviousness rejection the MPEP requires that the prior art must suggest the desirability of the claimed invention. MPEP 2143.01. It is well settled that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. Id. In other words, there must be some objective reason to combine the teachings of the references. Id. Recently the Federal Circuit summarized the law in this area in In re Fulton, 2004 U.S. App. LEXIS 24815 (Fed. Cir., December 2, 2004). There the court noted that, "[s]tated another way, the prior art as a whole must 'suggest the desirability' of the combination. In re Beattie, 974 F.2d 1309, 1311 (Fed. Cir. 1992) (internal quotation omitted); Winner Int'l Royalty Corp. v. Wang, 202 F.3d 1340 (Fed. Cir. 2000) ('Trade-offs often concern what is feasible, not what is, on balance, desirable. Motivation to combine requires the latter.'). The source of the teaching, suggestion, or motivation may be 'the nature of the problem,' 'the teachings of the pertinent references,' or 'the ordinary knowledge of those skilled in the art.' In re Rouffet, 149 F.3d at 1355." In re Fulton.

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Because the Ungar reference does not disclose a rubberized pressure sensitive adhesive and does not disclose a double sided tape used as an adhesive layer, there can be no motivation to combine the references to obtain Applicant's claimed invention. However, even were the Condon and Ungar references deemed to disclose what the Office claims that they disclose, there would be no motivation to combine the references to obtain Applicant's claimed invention. The Ungar reference merely discloses that some adhesives are waterproof and does not give any reason why the addition of such an adhesive to any surface would be advantageous and does not say that such an adhesive would be advantageously used on a multilayer sign blank. Therefore, because there is no motivation to use the adhesive discussed within the Ungar reference in the multilayer sign blank disclosed by the Condon reference, the combination of these references does not render Applicant's invention obvious and the rejection should be withdrawn.

NEW CLAIMS

Moreover, new claims 11 and 12 are believed patentable in light of the references of record. Applicant believes that these new claims will not require an additional search because, even though they have been broadened in certain respects, these new claims recite elements largely contained in the present claims covered by the Examiner's previous search.

CONCLUSION

Applicant, intending to be completely responsive, believes that the amendments and remarks presented above resolve all outstanding issues on the above-referenced application. Accordingly, the application is believed to be in condition for allowance. Early notice thereof is earnestly solicited. While no additional fees are believed due, the Commissioner is hereby

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Filed: 9/29/2003

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authorized to charge any necessary additional fees, or credit any overpayment, to Deposit

Account No. 02-2051, referencing Attorney Docket No. 29006-2.

Respectfully submitted,

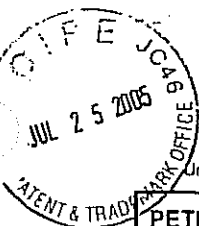
Dated: 21 July 2005

By: 

W. Scott Harders

Registration No. 42,629

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PTO/SB/22 (12-04)
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PETITION FOR EXTENSION OF TIME UNDER 37 CFR 1.136(a) FY 2005 <small>(Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).)</small>		Docket Number (Optional) 29006-2	
Application Number 10/674,108		Filed September 29, 2003	
For PRESSURE SENSITIVE ADHESIVE TAPE FOR FLOOR MARKING (OLD); ADHESIVE TAPE (NEW)			
Art Unit 1772		Examiner Nasser Ahmad	

This is a request under the provisions of 37 CFR 1.136(a) to extend the period for filing a reply in the above identified application.

The requested extension and fee are as follows (check time period desired and enter the appropriate fee below):

	<u>Fee</u>	<u>Small Entity Fee</u>	
<input checked="" type="checkbox"/> One month (37 CFR 1.17(a)(1))	\$120	\$60	\$ <u>\$60.00</u>
<input type="checkbox"/> Two months (37 CFR 1.17(a)(2))	\$450	\$225	\$ _____
<input type="checkbox"/> Three months (37 CFR 1.17(a)(3))	\$1020	\$510	\$ _____
<input type="checkbox"/> Four months (37 CFR 1.17(a)(4))	\$1590	\$795	\$ _____
<input type="checkbox"/> Five months (37 CFR 1.17(a)(5))	\$2160	\$1080	\$ _____

☒ Applicant claims small entity status. See 37 CFR 1.27.

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment, to Deposit Account Number 02-2051. I have enclosed a duplicate copy of this sheet.

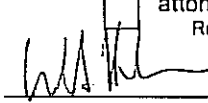
WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the ☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed (Form PTO/SB/96).

☒ attorney or agent of record. Registration Number 42,629

☐ attorney or agent under 37 CFR 1.34.
Registration number if acting under 37 CFR 1.34 _____

 _____
Signature

July 21, 2005

Date

W. Scott Harders _____
Typed or printed name

216-363-4443 _____
Telephone Number

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.136(a). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 6 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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07/26/2005 HVDUN51 00000101 10674108

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In re application of	: THOMAS R. GOECKE	Examiner	: NASSER AHMAD
Application No.	: 10/674,108	Group Art	: 1772
Filing Date	: SEPTEMBER 29, 2003	Docket No. :	GOEC 200001 (old) 29006-2 (new)
Confirmation No.	: 2438		
Title	: PRESSURE SENSITIVE ADHESIVE TAPE FOR FLOOR MARKING (OLD) : ADHESIVE TAPE (NEW)		

CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.8*

July 21, 2004

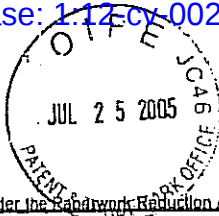
(Date)

Leslie Ann Kuder

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Signature

1. Transmittal
2. One Month Extension of Time
3. Fee Transmittal
4. PTO Credit Card Payment Form
5. Response to Office Action dated March 21, 2005; and
6. Return Receipt Postcard



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**TRANSMITTAL
FORM**

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Total Number of Pages in This Submission

22

Application Number

10/674,108

Filing Date

September 29, 2003

First Named Inventor

Thomas R. Goecke

Art Unit

1772

Examiner Name

Nasser Ahmad

Attorney Docket Number

GOEC 200001 (old); 29006-2 (new)

ENCLOSURES (Check all that apply)

<input checked="" type="checkbox"/> Fee Transmittal Form <input checked="" type="checkbox"/> Fee Attached <input checked="" type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input checked="" type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): - Return Receipt Postcard - Certificate of Mailing
Remarks		

SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Benesch, Friedlander, Coplan & Aronoff LLP		
Signature			
Printed name	W. Scott Harders		
Date	July 21, 2005	Reg. No.	42,629

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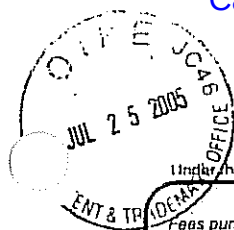
Leslie Ann Kuder

Date

July 21, 2005

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PTO/SB/17 (12-04v2)

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Fees pursuant to the Consolidated Appropriations Act, 2005 (H.R. 4818).

FEE TRANSMITTAL

For FY 2005

☒ Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$) 60.00

Complete if Known

Application Number	10/674,108
Filing Date	September 29, 2003
First Named Inventor	Thomas R. Goecke
Examiner Name	Nasser Ahmad
Art Unit	1772
Attorney Docket No.	GOEC200001(old); 29006-2(new)

METHOD OF PAYMENT (check all that apply)

☐ Check ☒ Credit Card ☐ Money Order ☐ None ☐ Other (please identify): _____

☒ Deposit Account Deposit Account Number: 02-2051 Deposit Account Name: Benesch, Friedlander

For the above-identified deposit account, the Director is hereby authorized to: (check all that apply)

☐ Charge fee(s) indicated below ☐ Charge fee(s) indicated below, except for the filing fee

☒ Charge any additional fee(s) or underpayments of fee(s) under 37 CFR 1.16 and 1.17 ☒ Credit any overpayments

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

FEE CALCULATION

1. BASIC FILING, SEARCH, AND EXAMINATION FEES

Application Type	FILING FEES		SEARCH FEES		EXAMINATION FEES		Fees Paid (\$)
	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	Fee (\$)	Small Entity Fee (\$)	
Utility	300	150	500	250	200	100	
Design	200	100	100	50	130	65	
Plant	200	100	300	150	160	80	
Reissue	300	150	500	250	600	300	
Provisional	200	100	0	0	0	0	

2. EXCESS CLAIM FEES

Fee Description	Fee (\$)	Small Entity Fee (\$)
Each claim over 20 (including Reissues)	50	25
Each independent claim over 3 (including Reissues)	200	100
Multiple dependent claims	360	180
Total Claims	Extra Claims	Fee (\$)
- 20 or HP = _____ x _____ = _____		
HP = highest number of total claims paid for, if greater than 20.		
Indep. Claims	Extra Claims	Fee (\$)
- 3 or HP = _____ x _____ = _____		
HP = highest number of independent claims paid for, if greater than 3.		
	Multiple Dependent Claims	Fee (\$)
	Fee (\$)	Fee Paid (\$)

3. APPLICATION SIZE FEE

If the specification and drawings exceed 100 sheets of paper (excluding electronically filed sequence or computer listings under 37 CFR 1.52(e)), the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).

Total Sheets	Extra Sheets	Number of each additional 50 or fraction thereof	Fee (\$)	Fee Paid (\$)
_____ - 100 = _____	_____ / 50 = _____	(round up to a whole number) x _____	= _____	

4. OTHER FEE(S)

Non-English Specification, \$130 fee (no small entity discount)

Other (e.g., late filing surcharge): Fee for One Month Extension

\$60.00

SUBMITTED BY

Signature		Registration No. (Attorney/Agent) 42,629	Telephone 216-363-4443
Name (Print/Type)	W. Scott Harders	Date July 21, 2005	

This collection of information is required by 37 CFR 1.136. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 30 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PTO/SB/06 (08-03)

Approved for use through 7/31/2006. OMB 0651-0032

U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE

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PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docket Number

101674, 108

CLAIMS AS FILED - PART I

(Column 1)

(Column 2)

SMALL ENTITY

OR

OTHER THAN
SMALL ENTITY

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a))		
TOTAL CLAIMS (37 CFR 1.16(c))	10 minus 20 =	*
INDEPENDENT CLAIMS (37 CFR 1.16(b))	1 minus 3 =	*
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(d))		

RATE	FEE
	\$
x \$	=
x \$	=
+ \$	=
TOTAL	

RATE	FEE
	\$
x \$	=
x \$	=
+ \$	=
TOTAL	

* If the difference in column 1 is less than zero, enter "0" in column 2.

CLAIMS AS AMENDED - PART II

(Column 1)

(Column 2)

(Column 3)

SMALL ENTITY

OR

OTHER THAN
SMALL ENTITY

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(c))	10	20	=
Independent (37 CFR 1.16(b))	3	3	=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))			

RATE	ADDI- TIONAL FEE
x \$	=
x \$	=
+ \$	=
TOTAL ADD'L FEE	

RATE	ADDI- TIONAL FEE
x \$	=
x \$	=
+ \$	=
TOTAL ADD'L FEE	

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(c))			=
Independent (37 CFR 1.16(b))			=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))			

RATE	ADDI- TIONAL FEE
x \$	=
x \$	=
+ \$	=
TOTAL ADD'L FEE	

RATE	ADDI- TIONAL FEE
x \$	=
x \$	=
+ \$	=
TOTAL ADD'L FEE	

AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(c))			=
Independent (37 CFR 1.16(b))			=
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))			

RATE	ADDI- TIONAL FEE
x \$	=
x \$	=
+ \$	=
TOTAL ADD'L FEE	

RATE	ADDI- TIONAL FEE
x \$	=
x \$	=
+ \$	=
TOTAL ADD'L FEE	

* If the entry in column 1 is less than the entry in column 2, write "0" in column 3.

** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".

*** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".

The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/674,108	09/29/2003	Thomas R. Goecke	GOEC 2 00001

CONFIRMATION NO. 2438

27885
FAY, SHARPE, FAGAN, MINNICH & MCKEE, LLP
1100 SUPERIOR AVENUE, SEVENTH FLOOR
CLEVELAND, OH 44114



Date Mailed: 08/31/2005

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/18/2005.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

M. Stephanos

MENBE STEPHANOS
PTOSS (-)

OFFICE COPY



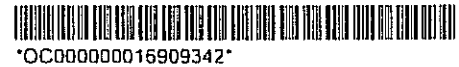
UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NUMBER	FILING OR 371 (c) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/674,108	09/29/2003	Thomas R. Goecke	29006-2

21130
BENESCH, FRIEDLANDER, COPLAN & ARONOFF LLP
ATTN: IP DEPARTMENT DOCKET CLERK
2300 BP TOWER
200 PUBLIC SQUARE
CLEVELAND, OH 44114

CONFIRMATION NO. 2438



Date Mailed: 08/31/2005

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 08/18/2005.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

M. Stephanos
MENBE STEPHANOS
PTOSS ()-

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PTO/SB/82 (04-05)

Approved for use through 11/30/2005. OMB 0651-0035

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**REVOCATION OF POWER OF
ATTORNEY WITH
NEW POWER OF ATTORNEY
AND
CHANGE OF CORRESPONDENCE ADDRESS**

Application Number	10/674,108
Filing Date	September 29, 2003
First Named Inventor	Thomas R. Goecke
Art Unit	1772
Examiner Name	Nasser Ahmad
Attorney Docket Number	29006-2(formerly GOEC 2 00001)

I hereby revoke all previous powers of attorney given in the above-identified application.

☐ A Power of Attorney is submitted herewith.

OR

☒ I hereby appoint the practitioners associated with the Customer Number:

21130

☒ Please change the correspondence address for the above-identified application to:

☒ The address associated with
Customer Number:

21130

OR

☐ Firm or
Individual Name

Address

City

State

Zip

Country

Telephone

Email

I am the:

☐ Applicant/Inventor.

☒ Assignee of record of the entire interest. See 37 CFR 3.71.
Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

SIGNATURE of Applicant or Assignee of Record

Signature

Name

Thomas R. Goecke

Date

6/16/05

Telephone

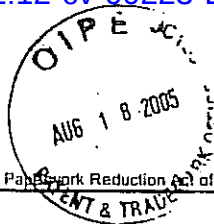
216-870-1575

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ Total of _____ forms are submitted.

This collection of information is required by 37 CFR 1.36. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 3 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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PTO/SB/96 (09-04)
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STATEMENT UNDER 37 CFR 3.73(b)

Applicant/Patent Owner: ShieldMark, Inc.

Application No./Patent No.: 10/674,108 Filed/Issue Date: September 29, 2003

Entitled: PRESSURE SENSITIVE ADHESIVE TAPE FOR FLOOR MARKING

ShieldMark, Inc., a _____,
(Name of Assignee) (Type of Assignee, e.g., corporation, partnership, university, government agency, etc.)

states that it is:

1. ☒ the assignee of the entire right, title, and interest; or
2. ☐ an assignee of less than the entire right, title and interest.
The extent (by percentage) of its ownership interest is _____ %

in the patent application/patent identified above by virtue of either:

A. ☒ An assignment from the inventor(s) of the patent application/patent identified above. The assignment was recorded in the United States Patent and Trademark Office at Reel 016154, Frame 0333, or for which a copy thereof is attached.

OR

B. ☐ A chain of title from the inventor(s), of the patent application/patent identified above, to the current assignee as shown below:

1. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
2. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.
3. From: _____ To: _____
The document was recorded in the United States Patent and Trademark Office at Reel _____, Frame _____, or for which a copy thereof is attached.

☐ Additional documents in the chain of title are listed on a supplemental sheet.

☒ Copies of assignments or other documents in the chain of title are attached.
[NOTE: A separate copy (i.e., a true copy of the original assignment document(s)) must be submitted to Assignment Division in accordance with 37 CFR Part 3, if the assignment is to be recorded in the records of the USPTO. See MPEP 302.08]

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Thomas R. Goecke
Signature

Thomas R. Goecke

Printed or Typed Name

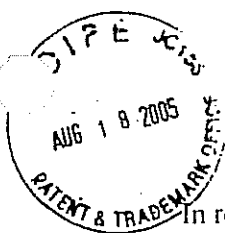
6/16/2005
Date

440-895-9980
Telephone Number

Product Developer
Title

This collection of information is required by 37 CFR 3.73(b). The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : THOMAS R. GOECKE

Examiner : NASSER AHMAD

Application No. : 10/674,108

Group Art : 1772

Filing Date : SEPTEMBER 29, 2003

Docket No. : GOEC 200001 (old)
29006-2 (new)

Title : PRESSURE SENSITIVE ADHESIVE TAPE FOR FLOOR MARKING (OLD)
: ADHESIVE TAPE (NEW)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

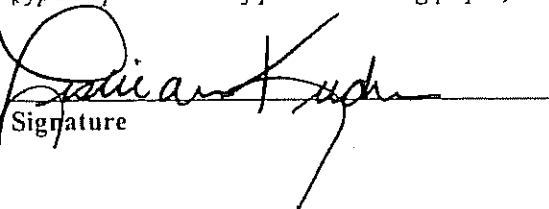
CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.8*

I hereby certify that these papers are being deposited with the United States Postal Service with sufficient postage as FIRST CLASS MAIL on August 16, 2005 in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450

August 16, 2004
(Date)

Leslie Ann Kuder

(type or print name of person mailing paper)


Signature

Items enclosed herewith:

1. Revocation of Power of Attorney Form (1 page)
2. Statement Under 37 CFR 3.73(b) (1 page); and
3. Return Receipt Postcard



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
 United States Patent and Trademark Office
 Address: COMMISSIONER FOR PATENTS
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	29006-2	2438
21130	7590	10/18/2005	EXAMINER	
BENESCH, FRIEDLANDER, COPLAN & ARONOFF LLP			AHMAD, NASSER	
ATTN: IP DEPARTMENT DOCKET CLERK				
2300 BP TOWER			ART UNIT	
200 PUBLIC SQUARE			PAPER NUMBER	
CLEVELAND, OH 44114			1772	

DATE MAILED: 10/18/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

25

Office Action Summary	Application No.	Applicant(s)	
	10/674,108	GOECKE, THOMAS R.	
	Examiner	Art Unit	
	Nasser Ahmad	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 July 2005.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date: _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date: _____ | 6) <input type="checkbox"/> Other: _____ |

Application/Control Number: 10/674,108

Page 2

Art Unit: 1772

DETAILED ACTION

Rejections Withdrawn

1. Claims 1-10 are rejected under 35 U.S.C. 112, second paragraph, made in the last Office Action has been withdrawn in view of the amendment filed on July 25, 2005.
2. Claims 1-6 and 8-10 are rejected under 35 U.S.C. 102(b) as being anticipated by Condon (5686170) has been withdrawn in view of the amendment.
3. Claims 1-7 and 9-10 are rejected under 35 U.S.C. 102(e) as being anticipated by Ungar (6440538) has been withdrawn in view of the amendment.
4. Claims 1-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Condon in view of Ungar has been withdrawn in view of the amendment.

Response to Arguments

5. Applicant's arguments with respect to claims 1-7, 9-10 and newly submitted claims 11 and 12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Application/Control Number: 10/674,108 .

Page 3

Art Unit: 1772

7. Claims 1- 6, 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (5839977).

Maurer relates to an adhesive tape appliqué (abstract) comprising a polymer layer (54) having a durometer Shore A hardness of between 75 and 95 (col. 10, lines 6-10) and a thickness of 0.08 to 0.14 inches (col. 12, lines 10-14), and a layer of adhesive is attached to the polymer layer. The tape polymer layer can have textures surface, such as stepped as shown in figure-14 and the thickness of said layer varies between 0.008 and 0.048 inches (col. 12, line 66 to col. 13, line 3). However, Maurer fails to teach that the hardness ranges between 92 and 100 and that the thickness is between 0.020 and 0.065 inches. It would have been obvious to one having ordinary skill in the art to modify Maurer by providing the polymer hardness to range between 92 and 100 because Maurer teaches a hardness of 95 which is in the claimed range of 92-100, and also the thickness of 0.048 inches is in the claimed range of 0.020 and 0.065 inches.

The tape is attached to a substrate(18) by the outermost side of the adhesive. The polymer layer is polyvinyl chloride (PVC) (col. 12, lines 10-11). The polymer can include colors (col. 9, lines 17-18) and PVC is known in the art to be clear. The adhesive is a double-sided adhesive tape as it adheres to the polymer layer on one side and the substrate on the opposite side. Further, because the adhesive is protected by a release liner (col. 12, lines 14-17), it would be obvious to one having ordinary skill in the art that the adhesive is of the pressure sensitive type.

As for the adhesive thickness being 65-69 mils, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Maurer's

Application/Control Number: 10/674,108

Page 4

Art Unit: 1772

adhesive to have a thickness of 65-69 mils, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In this case, in the absence of any showing of criticality by the applicant, it would have been obvious to modify Maurer's adhesive to have the claimed thickness of 65-69 mils for optimizing adhesivability of the tape.

Similarly, it would have been obvious to modify Maurer's adhesive to have a peel adhesion of greater than 2.0 lb/in. width for providing adhesivability of the tape to a substrate.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nasser Ahmad whose telephone number is 571-272-1487. The examiner can normally be reached on 7:30 AM to 5:00 PM, and on alternate Friday.

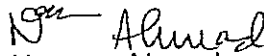
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Application/Control Number: 10/674,108

Page 5

Art Unit: 1772

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Nasser Ahmad
Primary Examiner 10/13/05
Art Unit 1772

N. Ahmad.
October 13, 2005.

Notice of References Cited	Application/Control No. 10/674,108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.	
	Examiner Nasser Ahmad	Art Unit 1772	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
	A	US-5,839,977 A	11-1998	Maurer et al.	473/446
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims



Application No.

10/674,108

Examiner

Nasser Ahmad

Applicant(s)

GOECKE, THOMAS R.

Art Unit

1772

✓	Rejected
□	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date											
Final	Original	3/16/05	10/13/05										
	1	✓	✓										
	2	✓	✓										
	3	✓	✓										
	4	✓	✓										
	5	✓	✓										
	6	✓	✓										
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Search Notes

Application No.

10/674,108

Examiner

Nasser Ahmad

Applicant(s)

GOECKE, THOMAS R.

Art Unit

1772

SEARCHED

Class	Subclass	Date	Examiner
428	40.1,40.6	3/15/2005	NA
	41.3,41.6		
	42.1,207		
	343,354		
	217,908.8		
above	UPDATED	10/13/2005	NA

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

**SEARCH NOTES
(INCLUDING SEARCH STRATEGY)**

	DATE	EXMR
WEST and Inventor's Search	3/15/2005	NA
WEST and Inventor's search	10/13/2005	NA

WEST Search History

DATE: Thursday, October 13, 2005

<u>Hide?</u>	<u>Set Name</u>	<u>Query</u>	<u>Hit Count</u>
	<i>DB=EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L25	l23 and L24	11
<input type="checkbox"/>	L24	adhesive near3 tape	39719
<input type="checkbox"/>	L23	"shore A"	3048
	<i>DB=USOC; PLUR=YES; OP=ADJ</i>		
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<input type="checkbox"/>	L21	adhesive near3 tape	9317
<input type="checkbox"/>	L19	shore near3 hard\$4	3313
<input type="checkbox"/>	L18	"Shore A"	0
	<i>DB=PGPB,USPT; PLUR=YES; OP=ADJ</i>		
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<input type="checkbox"/>	L15	l2 with L14	9
<input type="checkbox"/>	L14	l3 near3 tape	59296
<input type="checkbox"/>	L13	l3 same l11	47
<input type="checkbox"/>	L12	l9 with L11	1
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<input type="checkbox"/>	L10	l7 same L9	3
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<input type="checkbox"/>	L8	mil\$1	406841
<input type="checkbox"/>	L7	l4 same L6	92
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<input type="checkbox"/>	L4	l2 same L3	956
<input type="checkbox"/>	L3	adhesive	494121
<input type="checkbox"/>	L2	"Shore A"	16828
<input type="checkbox"/>	L1	Goecke-thomas-r.in.	1

END OF SEARCH HISTORY

PATENT APPLICATION

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : THOMAS R. GOECKE Examiner : NASSER AHMAD
Application No. : 10/674,108 Group Art : 1772
Filing Date : SEPTEMBER 29, 2003 Docket No. : 29006-2 (new)
Confirmation No. : 2438
Title : ADHESIVE TAPE

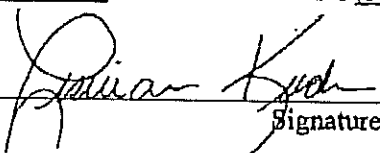
RECEIVED
CENTRAL FAX CENTER

JAN 12 2006

CERTIFICATE OF TRANSMISSION UNDER 37 CFR 1.8

I hereby certify that this Communication and associated papers is being facsimile transmitted to the United States Patent and Trademark Office

on January 12, 2006 to facsimile number (571) 273-8300



Signature

Leslie Ann Kuder

Typed or printed name of person signing Certificate

Associated Papers:

1. Response to Office Action (9 pages)

Note: Each paper must have its own certificate of transmission, or this certificate must identify each submitted paper.

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JAN 12 2006

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : THOMAS R. GOECKE Examiner : NASSER AHMAD
Application No. : 10/674,108 Group Art : 1772
Filing Date : SEPTEMBER 29, 2003 Docket No. : 29006-2 (new)
Confirmation No. : 2438
Title : ADHESIVE TAPE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT B AND RESPONSE TO OFFICE ACTION

Dear Examiner:

This is in response to the Office Action dated October 18, 2005, issued in connection with the above-referenced application. The Office Action set a three-month statutory period to respond. This Amendment B and Response to Office Action, forwarded on January 12, 2006 with a certificate of transmission/mailling, is thus, timely filed.

In re Goecke

Ser No.: 10/674,108, Filed: 9/29/03

Docket No.: 29006-2

Amendment A and Response to Office Action Dated October 18, 2005

IN THE CLAIMS:

1. (currently amended) An adhesive tape comprising:
a polymer layer having a Shore A Hardness of between about 92 and 100 and a substantially uniform thickness of between about 0.020" to 0.065"; and
a layer of adhesive attached to said polymer layer.
2. (previously presented) The adhesive tape of claim 1, further comprising a substrate attached to an outermost side of said layer of adhesive.
3. (original) The adhesive tape claim of claim 1, wherein said polymer layer includes a textured surface.
4. (original) The adhesive tape of claim 1, wherein said polymer layer is comprised of a polyvinyl chloride.
5. (original) The adhesive tape of claim 1, wherein said polymer layer includes coloring pigment.
6. (original) The adhesive tape claim of claim 4, wherein said polyvinyl chloride comprises a clear polymer.
7. (previously presented) The adhesive tape claim of claim 1, wherein said adhesive comprises a rubberized double-sided tape.
8. cancelled
9. (previously presented) The adhesive tape claim of claim 1, wherein said polymer layer has a Shore A Hardness of between about 93 and 97.

In re Goecke

Ser No.: 10/674,108, Filed: 9/29/03

Docket No.: 29006-2

Amendment A and Response to Office Action Dated October 18, 2005

10. (original) The adhesive tape of claim 1, wherein said adhesive is pressure sensitive.
11. (previously presented) An adhesive tape comprising:
 - a polymer layer having a Shore A Hardness of between about 92 and 100; and
 - a layer of pressure sensitive adhesive comprising a first side and an opposed second side, the first side being in direct and uninterrupted contact with the polymer layer where the adhesive tape comprises an average thickness between 65 mil and 69 mil.
12. (currently amended) An adhesive tape for application to a flooring environment comprising:
 - a polymer layer having a ~~Shore A Hardness between 92 and 100~~ and a thickness between 0.020" and 0.065", the polymer layer defining a first side; and
 - a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment;
 - where the adhesive tape has a peel adhesion greater than 2.0 lb/in width.

In re Goecke

Ser No.: 10/674,108, Filed: 9/29/03

Docket No.: 29006-2

Amendment A and Response to Office Action Dated October 18, 2005

REMARKS

Applicant wishes to thank the Examiner for the consideration given this case to date.

Applicant has now had an opportunity to carefully consider the Examiner's action, and respectfully submits that the application, as amended, is now in condition for allowance. Claims 1-7 and 9-12 remain pending.

THE EXAMINER'S ACTION

In the Office Action dated October 18, 2005, the Office:

- 1) withdrew the rejections in the previous Office Action; and
- 2) rejected claims 1-6 and 9-12 under 35 U.S.C. § 103(a) as being unpatentable over U.S.

Patent No. 5,839,977 to Maurer ("Maurer").

PROCEDURAL MATTERS

There is an inconsistency in the posture of the present application. In the Office Action Summary, the Office lists claims 1-7 and 9-12 as being rejected. However, in the Detailed Action, only claims 1-6 and 9-12 are addressed. Thus, the allowability of pending claim 7 may have been overlooked by the Office. In order to be completely responsive however, Applicant will here treat all pending claims (1-7 and 9-12) as being rejected and will present remarks relating to the appropriateness of such a rejection in light of the record and references.

Additionally, Applicant requests an acknowledgment that the Drawing filed with the application on September 23, 2003 is acceptable.

In re Goecke

Ser No.: 10/674,108, Filed: 9/29/03

Docket No.: 29006-2

Amendment A and Response to Office Action Dated October 18, 2005

REJECTIONS UNDER 35 U.S.C. § 103(a)

Claims 1-7 and 9-12 are not obvious in light of Maurer alone

As understood, Maurer relates to tape intended for application to hockey sticks. In an illustrated embodiment, an appliqué is shown containing "steps" that are thought to provide directional control of a hockey puck following contact with the stick blade (see generally, Figure 14 and discussion starting at column 12, line 42 bridging to column 13, line 18). To achieve this directional control, Maurer discloses a stepped configuration where the thickness of the appliqué increases at each step by 0.020".

As amended, Claim 1 calls for a polymer layer having a Shore A Hardness of between about 92 and 100 and a substantially uniform thickness of between about 0.020" to 0.065".

The Office admits that Maurer "fails to teach ... hardness ranges between 92 and 100" and a thickness "between 0.020 and 0.065 inches" (Office Action, middle of page 3). The Office attempts to rectify this failure by suggesting that Maurer teaches a thickness contained in the claimed range, namely 0.048 inches.

The Office relies on a passage in Maurer discussing the stepped tape configuration. The "step" presumably includes both the tape substrate and adhesive layers. (column 12, lines 66 and 67). The passage describes a first step having a thickness of 0.008 inches, a second step having a thickness of 0.028 inches and a third step having a thickness of about 0.048 inches.

Recalling that the claim recites a polymer layer having a substantially uniform thickness between 0.020" to 0.065", it is now apparent that Maurer does not meet the limitation. Instead, Maurer recites a tape including abruptly increasing thicknesses in order to provide directional

In re Goecke

Ser No.: 10/674,108, Filed: 9/29/03

Docket No.: 29006-2

Amendment A and Response to Office Action Dated October 18, 2005

control over a puck hitting a hockey stick. For this reason alone, Maurer fails to teach or render obvious Claim 1, or Claims 2-7, 9 and 10 depending therefrom.

Claim 7 calls for the adhesive to comprise a rubberized double-sided tape. The Office concludes summarily that Maurer discloses a double-sided tape. As a threshold matter, the Office does not assert and nowhere in Maurer is there a teaching of any rubberized tape. For this reason alone the rejection should be withdrawn because Maurer does not disclose each and every element of the claim.

Secondly, the Office's conclusory assessment that Maurer discloses a double-sided tape merely because it adheres to layers on opposing sides is overbroad. Specifically, were this assertion to be meritorious, it would require that other clearly non-tape products such as glues, epoxies, and even used chewing gum to be considered "double-sided tape" merely because they adhere on opposing sides. Since the Office stretches the definition of "tape" beyond any conventional meaning, the rejection should be withdrawn.

Thus, for the reasons above, Maurer fails to teach or render obvious Claim 7, and the rejection should be withdrawn.

Claim 10 calls for the adhesive to be pressure sensitive. The Office, confronted with the lack of any such teaching in Maurer, accepts the ready expedient of declaring that such an element would be obvious. The rationale supplied by the Office – that a pressure sensitive adhesive is obvious merely because Maurer's disclosed adhesive is protected by a release liner – is unconvincing. Applicant discovered no teaching that a release liner would suggest a pressure sensitive adhesive to an artisan. Should the Office maintain this rejection, Applicant requests a

In re Goecke

Ser No.: 10/674,108, Filed: 9/29/03

Docket No.: 29006-2

Amendment A and Response to Office Action Dated October 18, 2005

specific citation to the portion of the reference relied upon in support of the combination suggested.

Claim 11 calls for, among others, a pressure sensitive adhesive. For reasons set forth above, this rejection is improper and should be withdrawn.

Claim 11 further calls for an average thickness of 65 – 69 mils. First, it is noteworthy that Maurer discloses, at maximum, part of a tape with a thickness of 48 mils. Thus, at best, the reference not only fails to teach anything actually in the claimed range, but misses by a margin of 40%. Were Maurer's average thickness used, as claimed, it would miss by a margin of 145%.

Second, the Office asserts that the motivation to dramatically increase the thickness is for "optimizing adhesivability" of the tape. This is contrived. Merely increasing tape thickness does not necessarily correlate into increased adhesiveness. Conversely, decreasing tape thickness does not necessarily correlate into decreased adhesion. More than thickness of the tape, adhesion is dependent on environmental conditions and properties of the adhesive in use.

Thus, for the reasons above, Maurer fails to teach or render obvious Claim 11, and the rejection should be withdrawn.

Claim 12 calls for, among others, a double sided adhesive layer. For reasons set forth above with respect to Claim 7, this rejection is improper and should be withdrawn.

Claim 12 additionally calls for a peel adhesion of greater than 2.0 lb/in. width. Maurer is completely silent on the matter of peel adhesion. In order to establish a prima facie case of obviousness, the Office must establish three basic criteria. First, there must be some suggestion

In re Goecke

Ser No.: 10/674,108, Filed: 9/29/03

Docket No.: 29006-2

Amendment A and Response to Office Action Dated October 18, 2005

or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or suggest all the claim limitations. MPEP § 2143. If one criteria is unmet, the rejection is improper and should be withdrawn. Here Maurer fails on at least two counts.

First, Maurer fails to suggest the claimed limitation. Indeed, Maurer appears to suggest an adhesive "similar or identical" to that used on then current hockey tapes (Column 9, lines 41-43). No information in the record reflects what this adhesion would be, while the experimental data obtained by Applicant shows a marked increase in adhesion over the comparison tape. The mere fact that a reference can be modified does not render the resultant modification obvious unless the prior art also suggests the desirability of the modification. Since Maurer fails to suggest the modification proposed by the Office, Maurer fails to render obvious Claim 12.

Second, Maurer utterly fails to teach or suggest all the claim limitations. As noted, Maurer is completely silent on the matter of peel adhesion. As such, because Maurer fails to teach or suggest all the claim limitations, the rejection should be withdrawn.

For the reasons above, Maurer fails to render obvious Claim 12, and the rejection should be withdrawn.

In re Goecke

Ser No.: 10/674,108, Filed: 9/29/03

Docket No.: 29006-2

Amendment A and Response to Office Action Dated October 18, 2005


CONCLUSION

Applicant, intending to be completely responsive, believes that the amendments and remarks presented above resolve all outstanding issues on the above-referenced application. Accordingly, the application is believed to be in condition for allowance. Early notice thereof is earnestly solicited. While no additional fees are believed due, the Commissioner is hereby authorized to charge any necessary additional fees, or credit any overpayment, to Deposit Account No. 02-2051, referencing Attorney Docket No. 29006-2.

Respectfully submitted,

Dated: January 12, 2006

By:



W. Scott Harders
Registration No. 42,629

BENESCH, FRIEDLANDER,
COPLAN & ARONOFF, LLP
2300 BP Tower
200 Public Square
Cleveland, OH 44114-2378
(216) 363-4443

PTO/SB/06 (08-03)

Approved for use through 7/31/2006. OMB 0651-0032
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD

Substitute for Form PTO-875

Application or Docking Number

101674108

CLAIMS AS FILED - PART I

(Column 1) (Column 2)

FOR	NUMBER FILED	NUMBER EXTRA
BASIC FEE (37 CFR 1.16(a))		
TOTAL CLAIMS (37 CFR 1.16(c))	10	minus 20 =
INDEPENDENT CLAIMS (37 CFR 1.16(b))	1	minus 3 =
MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(d))		

* If the difference in column 1 is less than zero, enter "0" in column 2.

SMALL ENTITY

OR

OTHER THAN
SMALL ENTITY

RATE	FEE
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X \$	=
X \$	=
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TOTAL	

RATE	FEE
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CLAIMS AS AMENDED - PART II

(Column 1) (Column 2) (Column 3)

AMENDMENT A	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(c))	10	Minus	20
Independent (37 CFR 1.16(b))	3	Minus	3
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))			

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SMALL ENTITY

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X \$	=
+ \$	=
TOTAL ADD'L FEE	

RATE	ADDI- TIONAL FEE
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X \$	=
+ \$	=
TOTAL ADD'L FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT B	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
11/2/16 Total (37 CFR 1.16(c))	11	Minus	20
Independent (37 CFR 1.16(b))	3	Minus	3
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))			

RATE	ADDI- TIONAL FEE
X \$	=
X \$	=
+ \$	=
TOTAL ADD'L FEE	

RATE	ADDI- TIONAL FEE
X \$	=
X \$	=
+ \$	=
TOTAL ADD'L FEE	

(Column 1) (Column 2) (Column 3)

AMENDMENT C	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA
Total (37 CFR 1.16(c))		Minus	
Independent (37 CFR 1.16(b))		Minus	
FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(d))			

RATE	ADDI- TIONAL FEE
X \$	=
X \$	=
+ \$	=
TOTAL ADD'L FEE	

RATE	ADDI- TIONAL FEE
X \$	=
X \$	=
+ \$	=
TOTAL ADD'L FEE	

- * If the entry in column 1 is less than the entry in column 2, write "0" in column 3.
 ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20".
 *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3".
 The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	29006-2	2438

21130 7590 03/23/2006

BENESCH, FRIEDLANDER, COPLAN & ARONOFF LLP
 ATTN: IP DEPARTMENT DOCKET CLERK
 2300 BP TOWER
 200 PUBLIC SQUARE
 CLEVELAND, OH 44114

EXAMINER

AHMAD, NASSER

ART UNIT

PAPER NUMBER

1772

DATE MAILED: 03/23/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/674,108	GOECKE, THOMAS R.	
	Examiner	Art Unit	
	Nasser Ahmad	1772	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
 Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Application/Control Number: 10/674,108
Art Unit: 1772

Page 2

DETAILED ACTION

1. At first, examiner , apologizes for the inconvenience caused by the inadvertent typographical error whereby claim 7 was leftout from the rejection of the claims in the last Office Action and should have been included as claims 1-7 and 9-12 as shown by the claims rejected in the cover sheel of said Action. Applicant was correct to assume that the claim 7 would have been obvious over the prior art of Maurer. However, in view of the amendment filed on January 12, 2006 which changed the scope of the claimed invention, new grounds of rejections have been made hereinbelow and the Office Action made FINAL as necessitated by the amendment.

Rejections Withdrawn

2. Claims 1- 6, 9-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (5839977) made in the last Office Action of 10/18/2005 has been withdrawn in view of the amendment filed on 01/12/2006.

Response to Arguments

3. Applicant's arguments with respect to claims 1-6 and 9-12 have been considered but are moot in view of the new ground(s) of rejection.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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5. Claims 1- 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (5839977).

Maurer relates to an adhesive tape appliqué (abstract) comprising a polymer layer (54) having a durometer Shore A hardness of between 75 and 95 (col. 10, lines 6-10) and a thickness of 0.08 to 0.14 inches (col. 12, lines 10-14), and a layer of adhesive is attached to the polymer layer. The tape polymer layer can have textures surface, such as stepped as shown in figure-14 and the thickness of said layer varies between 0.008 and 0.048 inches (col. 12, line 66 to col. 13, line 3). The polymer layer (54) has a substantial uniform thickness as shown in figure- 7 because the protrusions (62) is formed on the surface (56) in most of the embodiment of the tape (col. 9, lines 44-47) and hence, it is interpreted by the examiner that some embodiments will have a substantially uniform layer without said protrusions. However, Maurer fails to teach that the hardness ranges between 92 and 100 and that the thickness is between 0.020 and 0.065 inches. It would have been obvious to one having ordinary skill in the art to modify Maurer by providing the polymer hardness to range between 92 and 100 because Maurer teaches a hardness of 95 which is in the claimed range of 92-100, and also the thickness of 0.048 inches is in the claimed range of 0.020 and 0.065 inches.

The tape is attached to a substrate(18) by the outermost side of the adhesive. The polymer layer is polyvinyl chloride (PVC) (col. 12, lines 10-11). The polymer can include colors (col. 9, lines 17-18) and PVC is known in the art to be clear. The adhesive is a double-sided adhesive tape as it adheres to the polymer layer on one side and the

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substrate on the opposite side. Further, the adhesive is protected by a release liner (col. 12, lines 14-17).

As for the adhesive thickness being 65-69 mils, it would have been obvious to one having ordinary skill in the art at the time the invention was made to provide Maurer's adhesive to have a thickness of 65-69 mils, since it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 USPQ 233. In this case, in the absence of any showing of criticality by the applicant, it would have been obvious to modify Maurer's adhesive to have the claimed thickness of 65-69 mils for optimizing structure of the tape.

6. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther (6461715).

Guenther relates to an adhesive tape comprising a polymer layer (11) having a thickness of 50-500 microns (col. 7, lines 19-25) and a first side of the polymer layer has a double-sided adhesive layer (12) because it has two sides of adhesive surface. As shown in figure-2, one side of the adhesive layer is in substantially continuous contact with the first side of the polymer layer. The adhesive tape can be a pressure sensitive adhesive tape, including rubber-based adhesive (col. 8, lines 36-40). The tape has a peel adhesion of at least 3.5 N/cm (col. 8, lines 10-16), which would include the claimed peel adhesion of greater than 2.0 lb/in width. However, Guenther fails to that the thickness is between 0.020 and 0.065 inches. It would have been obvious to one having

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ordinary skill in the art to modify Maurer by providing the polymer layer to have the thickness of between 0.020 and 0.065 inches because the recited thickness of 500 microns is in the claimed range of 0.020 and 0.065 inches.

The intended use phrases such as "for application", "to adhere", etc. have not been given any patentable weight because said phrases are not found to be of positive limitations

7. Claims 7,10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer in view of Guenther

Maurer, as discussed above, fails to teach that the adhesive is a rubberized double-sided tape. Guenther, also discussed above, relates to a double-sided pressure sensitive adhesive (PSA). Therefore, it would have been obvious to one having ordinary skill in the art to utilize Guenther's teaching of using a double-sided rubberized pressure sensitive adhesive tape in the invention of Maurer with the motivation to provide for enhancing its peel adhesion characteristics.

Response to Arguments

8. Applicant's arguments filed January 12, 2006 have been fully considered but they are not persuasive.

Applicant argues that Maurer's tape has stepped configuration and does not teach a substantially uniform thickness as recited in the amended claim 1. this is not deemed to be convincing because, Maurer teaches that most of the embodiments shows that the

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tape has protrusion (col. 9, lines 44-47), this is interpreted by the examiner as there are embodiments that do not have the protrusions, such as the textured tape of figure-10.

As for the thickness of 0.020 to 0.065 inches, Maurer clearly teaches that the thickness can vary between 0.008 and 0.048 inches which is inclusive of the lower claimed limit of thickness.

In response to applicant's argument that the thickness of 0.048 inches of Maurer is that of a stepped tape, applicant is informed that each section of said stepped tape is taken to be uniform in thickness. Further, in the absence of any definition as to what is defined by "substantially", said stepped thickness of Maurer is taken to be of substantially uniform thickness.

Regarding claim 7, the above rejection of Maurer in view of Guenther shows that it is well known in the adhesive art to have pressure sensitive tape that are rubberized.

Similarly, use of pressure sensitive adhesive for an adhesive tape is also well known in the adhesive art.

For claim 11, applicant is informed that the claimed thickness range is found to be obvious optimization, absent any showing of criticality, of adhesivability, by which it means that the tape would have structure and strength. It is also noted by the examiner that the specification, page 3, that the tape can have a variety of thicknesses and, in page 4, that the tape may have a thickness of 0.020 to 0.065 inches. These recitations clearly teaches that the tape thickness is based on optimization for tape structure and strength.

As amended, claim 12 is found to be obvious over Guenther as discussed above.

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Thus, in the absence of any evidence to the contrary, it remains the examiner's position that the claimed invention is obvious over the prior art of record discussed above.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nasser Ahmad whose telephone number is 571-272-1487. The examiner can normally be reached on 7:30 AM to 5:00 PM, and on alternate Friday.

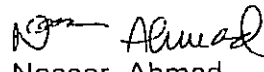
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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

 3/19/06
Nasser Ahmad
Primary Examiner
Art Unit 1772

N. Ahmad.
March 19, 2006.

Notice of References Cited

Application/Control No.

10/674,108

Applicant(s)/Patent Under

Reexamination

GOECKE, THOMAS R.

Examiner

Nasser Ahmad

Art Unit

1772

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-6,461,715 B1	10-2002	Guenther et al.	428/131
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims



Application No.

10/674,108

Examiner

Nasser Ahmad

Applicant(s)

GOECKE, THOMAS R.

Art Unit

1772

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date			
Final	Original	3/15/05	10/13/05	3/19/06	
	1	✓	✓	✓	
	2	✓	✓	✓	
	3	✓	✓	✓	
	4	✓	✓	✓	
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Search Notes



Application No.

10/674,108

Examiner

Nasser Ahmad

Applicant(s)

GOECKE, THOMAS R.

Art Unit

1772

SEARCHED

Class	Subclass	Date	Examiner
42B	40.1,40.6	3/15/2005	NA
	41.3,41.6		
	42.1,207		
	343,354		
	217,908.8		
above	UPDATED	10/13/2005	NA
above	UPDATED	3/18/2006	NA

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

SEARCH NOTES
(INCLUDING SEARCH STRATEGY)

	DATE	EXMR
WEST and Inventor's Search	3/15/2005	NA
WEST and Inventor's search	10/13/2005	NA
WEST (text search)	3/18/2006	NA

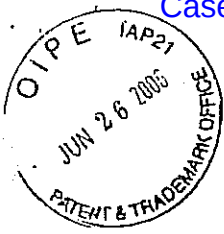
WEST Search History

Hide Items Restore Clear Cancel

DATE: Saturday, March 18, 2006

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<input type="checkbox"/>	L12	l10 and L11	2
<input type="checkbox"/>	L11	adhesive with (double\$1sided or double\$1faced)	3951
<input type="checkbox"/>	L10	peel near2 adhesion	638
	<i>DB=USOC; PLUR=YES; OP=ADJ</i>		
<input type="checkbox"/>	L9	l7 same L8	2
<input type="checkbox"/>	L8	adhesive with (double\$1sided or double\$1faced)	208
<input type="checkbox"/>	L7	peel near3 adhesion	223
	<i>DB=PGPB,USPT; PLUR=YES; OP=ADJ</i>		
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<input type="checkbox"/>	L5	l3 same L4	0
<input type="checkbox"/>	L4	polymer\$2 with backing	8938
<input type="checkbox"/>	L3	l1 same L2	32
<input type="checkbox"/>	L2	peel near3 adhesion	4553
<input type="checkbox"/>	L1	adhesive with (double\$1sided or double\$1faced)	10463

END OF SEARCH HISTORY



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : THOMAS R. GOECKE Examiner : NASSER AHMAD
Application No. : 10/674,108 Group Art : 1772
Filing Date : SEPTEMBER 29, 2003 Docket No. : 29006-2 (new)
Confirmation No. : 2438
Title : ADHESIVE TAPE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Examiner:

This cover sheet is in lieu of PTO/SB/33.

Applicant requests review of the Final Rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a concurrent Notice of Appeal. The review is requested for the reasons stated below (5 pages or fewer).

In re Goecke
Ser No.: 10/674,108, Filed: 9/29/03
Docket No.: 29006-2
Pre-Appeal Brief Request for Review

CLAIM SUMMARY

Claims 1-6 and 9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,839,977 to Maurer ("Maurer");

Claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,461,715 to Guenther ("Guenther"); and

Claims 7, 10 and 11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Maurer in view of Guenther.

REMARKS

Applicant respectfully traverses the final rejection of all the claims presently of record. To conform with the guidelines of the Pre-Appeal Brief Conference Pilot Project, Applicant limits the remarks here to those items believed to be clearly erroneous as set forth below.

As to Claims 1-6 and 9, the Office fails to make a prima-facie showing of obviousness. Specifically, the Office equates the claimed element "polymer layer" with the base member (54) of the Maurer reference. The Office concedes that Maurer teaches its base member as having a thickness of 0.08 to 0.14 inches (Final Office Action dated 3/23/06, paragraph 5, line 5). As this taught range clearly does not encompass the claimed range of 0.020 to 0.065 inches, the Office identified a different feature in the Maurer reference. Instead of continuing to reference the thin base member, the Office shifted its attention to an embodiment having a stepped configuration (Figure 14) showing an appliqué (98) evenly divided into thirds. The thickest portion, that is the third identified by reference numeral 112, is disclosed as having a thickness of 0.048 inches.

In re Goecke

Ser No.: 10/674,108, Filed: 9/29/03

Docket No.: 29006-2

Pre-Appeal Brief Request for Review

The Office concludes that since this portion was within the claimed range, that Claim 1 was an obvious combination.

This is incorrect for several reasons. First, claim 1 calls for, among others, a polymer layer having a substantially uniform thickness....” The multi-stepped feature of Figure 14 clearly does not meet the substantially uniform limitation. Here, the Office has merely located a protrusion within the claimed range and disregarded the multi-stepped features including the presence of the two thinner steps.

Second, the claim calls for, among others, a polymer layer having a thickness of between about 0.020” to 0.065”. While Maurer may teach a substantially uniform polymer layer in the element identified as the base member (54), there is no motivation to double or quintuple its thickness to reach the claimed range.

Additionally, the change suggested by the Office, providing a substantially uniform thickness (that is without protrusions), would render Maurer unfit for its intended purpose. Specifically, the protrusions taught by Maurer are employed to control the spin imparted on a hockey puck (column 9, line 52 bridging to column 10, line 5). Removing the protrusions (that is, leaving a substantially uniform thickness on the polymer layer) would destroy Maurer’s intended use.

Alternatively, if the embodiment illustrated by Figure 14 were altered to a substantially uniform thickness, again the reference would be rendered unfit for its intended purpose. In this instance, the defect is revealed by the varying thickness of the neighboring ridges of the Figure 14 embodiment being intended to deflect a hockey puck in a downward direction. That is,

In re Goecke
Ser No.: 10/674,108, Filed: 9/29/03
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toward the surface of the ice (column 13, line 46-53). Were the ridges uniformly thick, as claimed, the puck's deflection angle would be merely a function of spin and angle of incidence.

Therefore, the rejection of Claims 1-6 and 9 are clearly improper, and the rejection should be withdrawn and the claims passed to allowance.

Regarding Claim 12, the Office posits that Guenther's teaching of a 500 micron backing (11) meets the claimed thickness of between 0.020 and 0.065 inches. This is incorrect. Readily available conversion tables reveal that 500 microns is less than 0.020 inches¹. Thus, Guenther does not teach a thickness within the claimed range and the rejection should be withdrawn and the claim passed to allowance.

Regarding Claims 7, 10 and 11, the Office has made no attempt to show that the combination proposed by the Office is suggested by either Maurer or Guenther. In particular, it is questionable whether an artisan dealing with hockey tape would encounter the teachings described in the diaper affixing apparatus of Guenther. Moreover, as the intended use of the Maurer tape is in close proximity to ice and likely to be employed in cold environments it is questionable that the rubberized double sided tape of Guenther would retain its function.

Additionally, the Office's assertion at paragraph 7 that the motivation to combine the references is to provide for enhanced peel adhesion is unfounded. Maurer appears to be concerned with controlling the direction of a hockey puck rather than improving peel characteristics. Indeed, Maurer appears satisfied with an adhesive "similar or identical" to that used on then current hockey tapes (column 9, lines 41-43). Thus, because there is no motivation

¹ Micron x 0.0000394 = inches
500 x 0.0000394 = 0.019685

In re Goecke
Ser No.: 10/674,108, Filed: 9/29/03
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Pre-Appeal Brief Request for Review

to make the combination proposed by the Office, these rejections are improper and should be withdrawn.

CONCLUSION

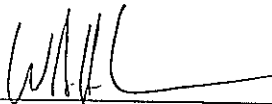
For the reasons above, Applicant believes the final rejection of the claims pending in the present application to be improper. Review, reconsideration and reversal are respectfully requested.

While no fees are believed due, the Commissioner is hereby authorized to charge any necessary fees to Deposit Account No. 02-2051, referencing Attorney Docket No. 29006-2.

Respectfully submitted,

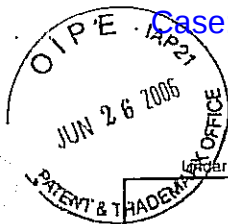
Dated: June 22, 2006

By:



W. Scott Harders
Registration No. 42,629

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COPLAN & ARONOFF, LLP
2300 BP Tower
200 Public Square
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(216) 363-4443



Approved for use through 07/31/2006. OMB 0651-0031
U.S. Patent and Trademark Office; U.S. DEPARTMENT OF COMMERCE
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NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Docket Number (Optional)

26006-2

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]
on June 22, 2006

Signature

Typed or printed name Leslie Ann Kuder

In re Application of

Thomas R. Goecke

Application Number

10/674,108

Filed

September 29, 2003

For ADHESIVE TAPE

Art Unit

1772

Examiner

Nasser Ahmad

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1))

\$ 500.00

☒ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is:

\$ 250.00

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.

☐ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. . I have enclosed a duplicate copy of this sheet.

☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest.
See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed.
(Form PTO/SB/96)

☒ attorney or agent of record.

Registration number 42,629

W. Scott Harders

Typed or printed name

(216) 363-4443

Telephone number

☐ attorney or agent acting under 37 CFR 1.34.

Registration number if acting under 37 CFR 1.34. _____

May 18, 2006

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : THOMAS R. GOECKE Examiner : NASSER AHMAD

Application No. : 10/674,108 Group Art : 1772

Filing Date : SEPTEMBER 29, 2003 Docket No. : GOEC 200001 (old)
29006-2 (new)

Confirmation No. : 2438

Title : PRESSURE SENSITIVE ADHESIVE TAPE FOR FLOOR MARKING (OLD)
: ADHESIVE TAPE (NEW)

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.8*

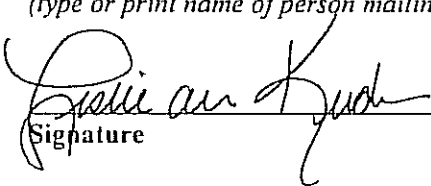
I hereby certify that these papers are being deposited with the United States Postal Service with sufficient postage as FIRST CLASS MAIL on May 18, 2006 in an envelope addressed to: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450

June 22, 2006

(Date)

Leslie Ann Kuder

(type or print name of person mailing paper)


Signature

Items enclosed herewith:

1. Pre-Appeal Brief Request for Review (5 pages)
2. Notice of Appeal (1 page)
3. PTO 2038 (1 page)
4. Return Receipt Postcard



UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	29006-2	2438

21130 7390 08/03/2006


BENESCH, FRIEDLANDER, COPLAN & ARONOFF LLP
ATTN: IP DEPARTMENT DOCKET CLERK
2300 BP TOWER
200 PUBLIC SQUARE
CLEVELAND, OH 44114

EXAMINER
AHMAD, NASSER

ART UNIT PAPER NUMBER
1772

DATE MAILED: 08/03/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Application Number 	Application/Control No. 10/674,108 Jennifer K. Michener	Applicant(s)/Patent under Reexamination GOECKE, THOMAS R. Art Unit 1762
Document Code - AP.PRE.DEC		

Notice of Panel Decision from Pre-Appeal Brief Review



This is in response to the Pre-Appeal Brief Request for Review filed June 26, 2006.

1. ☐ **Improper Request** – The Request is improper and a conference will not be held for the following reason(s):

- ☐ The Notice of Appeal has not been filed concurrent with the Pre-Appeal Brief Request.
- ☐ The request does not include reasons why a review is appropriate.
- ☐ A proposed amendment is included with the Pre-Appeal Brief request.
- ☐ Other:

The time period for filing a response continues to run from the receipt date of the Notice of Appeal or from the mail date of the last Office communication, if no Notice of Appeal has been received.

2. ☐ **Proceed to Board of Patent Appeals and Interferences** – A Pre-Appeal Brief conference has been held. The application remains under appeal because there is at least one actual issue for appeal. Applicant is required to submit an appeal brief in accordance with 37 CFR 41.37. The time period for filing an appeal brief will be reset to be one month from mailing this decision, or the balance of the two-month time period running from the receipt of the notice of appeal, whichever is greater. Further, the time period for filing of the appeal brief is extendible under 37 CFR 1.136 based upon the mail date of this decision or the receipt date of the notice of appeal, as applicable.

☐ The panel has determined the status of the claim(s) is as follows:

Claim(s) allowed: _____

Claim(s) objected to: _____

Claim(s) rejected: _____

Claim(s) withdrawn from consideration: _____

3. ☐ **Allowable application** – A conference has been held. The rejection is withdrawn and a Notice of Allowance will be mailed. Prosecution on the merits remains closed. No further action is required by applicant at this time.

4. ☒ **Reopen Prosecution** – A conference has been held. The rejection is withdrawn and a new Office action will be mailed. No further action is required by applicant at this time.

All participants:

(1) Jennifer K. Michener

(3) Nasser Ahmad

(2) Terrel Morris

(4) _____



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	29006-2	2438

21130 7590 10/19/2006

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EXAMINER

AHMAD, NASSER

ART UNIT PAPER NUMBER

1772

DATE MAILED: 10/19/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.
10/674,108Applicant(s)
GOECKE, THOMAS R.

Examiner

Art Unit

Nasser Ahmad

1772

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 26 June 2006.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn. The withdrawal notice was mailed on 8/3/2006 and was based on the pre-Appeal Brief request made by the applicant on 6/26/2006.

Rejections Withdrawn

2. Claims 1- 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (5839977) made in the last Office action of 3/23/2006 has been withdrawn in view of the request for pre-Appeal Brief filed on 6/26/2006.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther (6461715) made in the last Office action of 3/23/2006 has been withdrawn in view of the request for pre-Appeal Brief filed on 6/26/2006..

4. Claims 7,10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer in view of Guenther made in the last Office action of 3/23/2006 has been withdrawn in view of the request for pre-Appeal Brief filed on 6/26/2006.

Response to Arguments

5. Applicant's arguments with respect to claims 1-7 and 9-12 have been considered but are moot in view of the new ground(s) of rejection.

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Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1- 6, 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oace (2559990) in view of Hughart (6668501).

Oace relates to an adhesive tape comprising a polymer backing film of 4 to 20 mils thickness (col. 4, lines 21-22) and an adhesive layer contacting the backing film (col. 5, lines 44-47). The backing can be polyvinyl chloride (col. 4, lines 43-60). However, Oace fails to expressly teach that the backing film has a Shore A Hardness of 92-100.

Hughart discloses an adhesive tape comprising a backing (36) of polymeric material such as polyvinyl chloride having Shore A Hardness of 92 and an adhesive layer attached thereto (col. 2, lines 38-45). Figures 1 and 3 shows the backing to be of substantially uniform thickness. Therefore, it would have been obvious to one having ordinary skill in the art to utilize Hughart's teaching of providing an adhesive tape backing of polyvinyl chloride having a Shore A Hardness of 92 in the invention of Oace with the motivation to provide for hardness imparted for structural strength to the tape. For claim 2, Hughart teaches a substrate (30) is attached to the outermost side of the adhesive layer.

Regarding claim 3, the presence of a textured surface on the backing is inherent of the backing to be able to bond to the adhesive layer.

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Claim 5 is disclosed in col. 7, lines 66-67, wherein pigments can be added to the backing layer.

For claim 6, the tape backing is of polyvinyl chloride material is well in the art to be transparent (col. 7, lines 43-44).

For claim 9, it would have been obvious optimization, based on routine experimentation, to provide the backing of Hughart to have Shore A Hardness of 93-97 for optimizing the hardness of said backing polymer layer.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oace in view of Guenther (6461715).

Oace, as discussed above fails to teach that the peel adhesion of the adhesive layer is greater than 2.0 lb/in width. Guenther relates to an adhesive tape comprising a polymer layer (11) having a thickness of 50-500 microns (col. 7, lines 19-25) and a first side of the polymer layer has a double-sided adhesive layer (12) because it has two sides of adhesive surface. As shown in figure-2, one side of the adhesive layer is in substantially continuous contact with the first side of the polymer layer. The adhesive tape can be a pressure sensitive adhesive tape, including rubber-based adhesive (col. 8, lines 36-40). The tape has a peel adhesion of at least 3.5 N/cm (col. 8, lines 10-16), which would include the claimed peel adhesion of greater than 2.0 lb/in width. Therefore, it would have been obvious to one having ordinary skill in the art to utilize guenther's teaching by providing the adhesive layer to have a peel adhesion of at least 3.5 N/cm, which

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includes the claimed range of "greater than 2.0 lb/in width, in the invention of Oace with the motivation to provide for improved peel adhesion.

The intended use phrases such as "for application", "to adhere", etc. have not been given any patentable weight because said phrases are not found to be of positive limitations

9. Claims 7,10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oace in view of Hughart and Guenther

Oace and Hughart, as discussed above, fails to teach that the adhesive is a rubberized double-sided tape. Guenther, also discussed above, relates to a double-sided pressure sensitive adhesive (PSA). Therefore, it would have been obvious to one having ordinary skill in the art to utilize Guenther's teaching of using a double-sided rubberized pressure sensitive adhesive tape in the invention of Maurer with the motivation to provide for enhancing its peel adhesion characteristics.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nasser Ahmad whose telephone number is 571-272-1487. The examiner can normally be reached on 7:30 AM to 5:00 PM, and on alternate Friday.

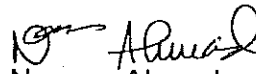
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Nasser Ahmad 10/16/06
Primary Examiner
Art Unit 1772

N. Ahmad.
October 16, 2006.

Notice of References Cited

Application/Control No.

10/674,108

Applicant(s)/Patent Under

Reexamination

GOECKE, THOMAS R.

Examiner

Nasser Ahmad

Art Unit

1772

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2,559,990	07-1951	OACE RALPH J; et. al.	428/337
*	B	US-6,668,504	12-2003	Hughart, Jeffrey S.	52/481.1
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

Index of Claims



10/674,108

Examiner

Nasser Ahmad

GOECKE, THOMAS R.

Art Unit

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✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date									
Final	Original	3/16/05	10/13/05	3/19/06	10/16/06						
	1	✓	✓	✓	✓						
	2	✓	✓	✓	✓						
	3	✓	✓	✓	✓						
	4	✓	✓	✓	✓						
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Search Notes



Application No. 10/674,108

Examiner

Nasser Ahmad

Applicant: GOECKE, THOMAS R.

Art Unit

1772

SEARCHED

Class	Subclass	Date	Examiner
428	40.1,40.6	3/15/2005	NA
	41.3,41.6		
	42.1,207		
	343,354		
	217,908.8		
above	UPDATED	10/13/2005	NA
above	UPDATED	3/18/2006	NA
above	UPDATED	10/16/2006	NA

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

SEARCH NOTES
(INCLUDING SEARCH STRATEGY)

	DATE	EXMR
WEST and Inventor's Search	3/15/2005	NA
WEST and Inventor's search	10/13/2005	NA
WEST (text search)	3/18/2006	NA
WEST (Text search)	10/16/2006	NA

WEST Search History

Hide Items	Restore	Clear	Cancel
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DATE: Monday, October 16, 2006

Hide?	<u>Set</u> <u>Name</u>	<u>Query</u>	<u>Hit</u> <u>Count</u>
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<input type="checkbox"/>	L14	l9 and l13	0

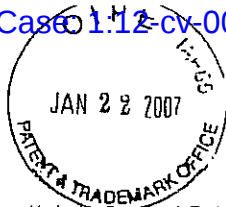
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<input type="checkbox"/>	L8	l1 and L7	9
<input type="checkbox"/>	L7	l4 same L6	57
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END OF SEARCH HISTORY



PTO/SB/31 (09-04)

Approved for use through 07/31/2006, OMB 0657-0031

U.S. Patent and Trademark Office, U.S. DEPARTMENT OF COMMERCE

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

NOTICE OF APPEAL FROM THE EXAMINER TO THE BOARD OF PATENT APPEALS AND INTERFERENCES

Docket Number (Optional)

29006-2

I hereby certify that this correspondence is being deposited with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to "Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450" [37 CFR 1.8(a)]
on January 17, 2007

Signature

Typed or printed name Leslie Ann Kuder

In re Application of

Thomas R. Goecke

Application Number

10/674,108

Filed

September 29, 2003

For ADHESIVE TAPE

Art Unit

1772

Examiner

Nasser Ahmad

Applicant hereby appeals to the Board of Patent Appeals and Interferences from the last decision of the examiner.

The fee for this Notice of Appeal is (37 CFR 41.20(b)(1))

\$ 500.00

☒ Applicant claims small entity status. See 37 CFR 1.27. Therefore, the fee shown above is reduced by half, and the resulting fee is:

\$ 250.00

☐ A check in the amount of the fee is enclosed.

☒ Payment by credit card. Form PTO-2038 is attached.

☐ The Director has already been authorized to charge fees in this application to a Deposit Account. I have enclosed a duplicate copy of this sheet.

☒ The Director is hereby authorized to charge any fees which may be required, or credit any overpayment to Deposit Account No. 02-2051. I have enclosed a duplicate copy of this sheet.

☐ A petition for an extension of time under 37 CFR 1.136(a) (PTO/SB/22) is enclosed.

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

I am the

☐ applicant/inventor.

☐ assignee of record of the entire interest. See 37 CFR 3.71. Statement under 37 CFR 3.73(b) is enclosed. (Form PTO/SB/96)

☒ attorney or agent of record. Registration number 42,629

(216) 363-4443

Telephone number

☐ attorney or agent acting under 37 CFR 1.34. Registration number if acting under 37 CFR 1.34, _____

January 17, 2007

Date

NOTE: Signatures of all the inventors or assignees of record of the entire interest or their representative(s) are required. Submit multiple forms if more than one signature is required, see below.

☐ *Total of _____ forms are submitted.

This collection of information is required by 37 CFR 41.31. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11, 1.14 and 41.6. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : THOMAS R. GOECKE Examiner : NASSER AHMAD
Application No. : 10/674,108 Group Art : 1772
Filing Date : SEPTEMBER 29, 2003 Docket No. : 29006-2 (new)

Confirmation No. : 2438

Title : ADHESIVE TAPE

Mail Stop Appeal Brief - Patents
Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

APPEAL BRIEF

Dear Sir or Madam:

The following Appeal Brief is submitted pursuant to the Notice of Appeal filed January 17, 2007 in the above-identified application. The Appeal Brief is filed on the first business day after the two-month filing date of the Notice of Appeal and, therefore, is timely filed. This Appeal Brief is accompanied by the fee set forth in 37 C.F.R. § 41.20(b)(2), as stated in the accompanying Fee Transmittal Form.

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I. REAL PARTY IN INTEREST

Shieldmark, Inc., Assignee of the present application is the real party in interest.

II. RELATED APPEALS AND INTERFERENCES

There are no related appeals or interferences.

III. STATUS OF CLAIMS

Claims 1-6, and 9-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 2,559,990 to Oace (hereafter "Oace") in view of U.S. Patent No. 6,668,504 to Hughart (hereafter "Hughart"). Claims 7, 10 and 11 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over Oace, in view of Hughart, U.S. Patent No. 6,461,715 to Guenther (hereafter "Guenther") and U.S. Patent No. 5,839,977 to Maurer (hereafter "Maurer"). Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Oace in view of Guenther. Claim 8 has been cancelled. Claims 1-7 and 9-12 remain pending and are on appeal (see Section VIII, Claims Appendix).

IV. STATUS OF AMENDMENTS

No amendments have been filed subsequent to the non-final Office Action, mailed October 19, 2006 (see Section IX, Evidence Appendix, Tab A "October 19, 2006 Office Action").

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed subject matter includes an adhesive tape having a polymer layer with a Shore A Hardness of between about 92 and 100 and a substantially uniform thickness of between about 0.020" to 0.065." A layer of adhesive is attached to the polymer layer. See page 2, lines.

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9-22; page 3, lines. 22-24; page 4, lines.1-2; Fig.1. Another aspect of the claimed subject matter includes an adhesive tape of between 65 and 69 millimeters thick and having a layer of double-sided pressure sensitive adhesive in direct contact with the polymer layer. See page 2, line 2 and 20-22; page 5, lines 33-34. In another aspect of the claimed subject matter, the adhesive tape for has a peel adhesion greater than 2.0 lb/in width. See page 4, line 4- page 6, line 23.

VI. GROUND OF REJECTION TO BE REVIEWED ON APPEAL

A. Whether Claims 1-6, and 9-10 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Oace in view of Hughart.

B. Whether Claims 7, 10 and 11 are unpatentable under 35 U.S.C. § 103(a) as being obvious over Oace, in view of Hughart, Guenther, and Maurer.

C. Whether Claim 12 is unpatentable under 35 U.S.C. § 103(a) as being obvious over Oace in view of Guenther.

VII. ARGUMENT

A. Introduction

The Applicant submits this Appeal Brief in support of its second Appeal from the Examiner in this matter. In the first appeal, a pre-appeal panel reversed the Office's rejections based on the Applicant's Pre-Appeal Brief Request For Review (see, Section IX, Evidence Appendix, Tab B, "Pre-Appeal Brief"). The application was returned to the Examiner and subsequently again rejected based in part on the same references deemed by the panel as insufficient to sustain a rejection. Far from incorporating more relevant art, the Office has cited new references directed to subject matter even further from the claims than before, such as a reference directed toward sound-deadening wall board.

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B. The Cited Art

Two of the references cited in the Office's action, Guenther and Maurer, served as the basis for the Office Action first reviewed and found lacking by the pre-appeal panel. Guenther discloses closure tape for disposable diapers including a non-elastic backing provided with incisions overlaying an elastic sheet to permit adjustment. (See, Section IX, Evidence Appendix, Tab C, Guenther, Abstract). Maurer discloses a stepped tape configuration for hockey sticks where the first step has a thickness of 0.008 inches, the second has a thickness of 0.028 inches, and the third step has a thickness of 0.048 inches. (See, Section IX, Evidence Appendix, Tab D, Maurer at 12:66-67). However, as explained below, the Office likely mistakenly cited Maurer in the October 19, 2006 Office Action and, perhaps instead intended to cite to other references. Nevertheless, the Applicant has addressed the Maurer reference below.

The two new references cited by the Office in the October 19, 2006 Office Action, Hughart and Oace, are neither analogous to the present application, nor do they contain the limitations missing from Guenther and Maurer. Hughart discloses a sound-deadened wall including a spacer mechanically connected between wooden studs and wall panels. (See, Section IX, Evidence Appendix, Tab E, Hughart, Abstract). Oace discloses an electrically insulating tape having elastic properties which render it highly effective for wrapping wire and cable splices. The elasticity of the tape disclosed in Oace is an important feature making snug wrappings possible. (See, Section IX, Evidence Appendix, Tab F, Oace, 3:56 bridging 4:3).

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C. Discussion

The rejections in the Office's October 19, 2006 Office Action are improper under the both the patent statutes and governing patent rules. The patent statutes require the claims to be considered as a whole:

A patent may not be obtained . . . if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains.

35 U.S.C. § 103 (a) (2000)(emphasis added.)

The Federal Circuit has discussed the importance that the claimed subject matter be considered as a whole, not broken into component parts:

Inventions typically are new combinations of existing principles or features. The 'as a whole' instruction in title 35 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might break an invention into its component parts (A + B + C), then find a prior art reference containing A, another containing B, and another containing C, and on that basis alone declare the invention obvious. This form of hindsight reasoning, using the invention as a roadmap to find its prior art components, would discount the value of combining various existing features or principles in a new way to achieve a new result – often the very definition of invention.

Ruiz v. A.B. Chance Co., 357 F.3d 1270 (2004).

Additionally, the Office's rejections are improper under the patent rules for a variety of reasons. For example, for the Office to rely on a reference under 35 U.S.C. § 103, it must be analogous prior art. (MPEP § 2141.01(a) citing In re Oetiker, 977 F.2d 1443, 1446, 24 USPQ2d 1443, 1445 (Fed. Cir. 1992)). If the references are analogous, the references still must teach all of the claim limitations in order to properly form a basis for a rejection. (MPEP § 2143.03 citing In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974)). Even then, a proposed modification must leave the reference satisfactory for its intended purpose. Otherwise, if the reference is

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rendered usable, but unsatisfactory, then there is no suggestion or motivation to make the proposed modification. (MPEP § 2143.01 citing In re Gordon, 733 F.3d 900, 221 USPQ 1125 (Fed. Cir. 1984)).

1. Claims 1-6 and 9-10 are not proper combinations of Oace and Hughart

Claims 1-6 and 9-10 stand rejected under 35 U.S.C. § 103(a) as being unpatentably obvious over Oace in view of Hughart.

As a threshold issue, Oace and Hughart are simply non-analogous art. Oace relates to a tape for electrical insulation and protection of electrical conductors, while Hughart relates to spacers separating wall boards from underlying wooden studs. The Office Action lacks any explanation why wall board sound deadening arts would have logically commended itself to an inventor's attention in considering an adhesive tape problem. Because there is no suggestion, explicit or implicit, that a wall board system should be considered as reasonably pertinent to the particular problem with which the inventor was concerned, the rejection of claims 1-6 and 9-10 is improper and should be withdrawn.

Further, even if Oace and Hughart were analogous, the Office has failed to consider the subject matter as a whole and has instead fallen victim to hindsight reasoning cautioned against by the Ruiz court. Specifically, as a whole, Hughart does not fairly suggest a polymer layer having the Shore A Hardness limitation missing from Oace. Pending claims 1-7 and 9-10 call for an adhesive tape having a thickness between 0.020 and 0.065 inches and comprising a polymer layer having a Shore A Hardness of between about 92-100. In rejecting these claims, the Office cited to a polymer wall board device 36 in the Hughart reference as disclosing an

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“adhesive tape” having a particular Shore A Hardness. However, reference number 36 of Hughart is not an adhesive tape but instead a “spacer” that is adapted to provide air gaps between the studs and the wall panel. As seen in the figures, these gaps appear to be about the thickness of the wall board. The Office did not attempt to explain how or why the apparently 0.5 inch spacer in Hughart could be reduced by an order of magnitude to meet the 0.020 and 0.065 inch range as claimed. Thus, Hughart fails to cure the admitted deficiencies in Oace, and the combination of Oace and Hughart does not render claims 1-7 and 9-10 obvious.

Further, the Office rejected claim 2 as unpatentable over Oace in view of Hughart, citing to Hughart’s disclosure of reference number 30 as a disclosure of the substrate of the present claim 2. Applicant’s claim 2 is directed to an adhesive tape comprising a substrate attached to the outermost side of the layer of adhesive. Reference number 30 in Hughart is not such a substrate but rather a “wall panel” having an “expansive surface” to which supporting structures are attached. (Hughart, 2:18-32). Therefore, the deficiencies of Oace are not cured by Hughart to render claim 2 unpatentable.

With regard to claim 3, the Office concluded, without support, that the polymer layer having a textured surface is “inherent of the backing to be able to bond to the adhesive layer,” therefore rendering the claim unpatentable over Oace in view of Hughart (October 19, 2006 Office Action, p.3). There is no teaching of a “textured surface” in either Oace or Hughart, nor did the Office offer any support for the conclusory statement. Therefore, the rejection is improper and should be overturned.

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The Office rejected claims 5 and 6 based on citations to Oace purporting to disclose the polymer layer having a coloring pigment of claim 5, and the polymer layer comprising a clear polyvinyl chloride of claim 6. However, because Oace fails to teach or disclose a polymer layer having a Shore A Hardness of between about 92 and 100, and Hughart does not cure those deficiencies, claims 5 and 6 are patentable over a combination of Oace and Hughart.

Regarding claim 9, the Office rejected the claim as an obvious optimization of the purported “backing” disclosed in Hughart. However, for the reasons given above, Hughart is not properly combined with Oace to render claim 9 obvious. Further, Hughart does not disclose the polymer layer of claim 9 but rather a “spacer” for use in sound-deadening walls. Therefore, Hughart, alone or in combination with Oace, does not render claim 9 unpatentably obvious.

As seen, the combination of Oace and Hughart is merely the result of a hindsight rationale identifying discrete, unrelated components from various references to declare the claims obvious. As such, it cannot be supported and the rejections should be reversed.

2. Claim 12 is not a proper combination of Oace in view of Guenther

In the rejection of claim 12 as unpatentably obvious over Oace in view of Guenther, the Office has again failed to consider the subject matter as a whole and has instead applied hindsight reasoning using the invention as a roadmap to find its disparate elements in the prior art.

For example, Guenther discloses a non-elastic backing layer (Guenther, 6:49-52) rendered stretchable by one or more incisions (or slits) 14 (Guenther, 11:29-35). On the other hand, Oace is replete with descriptions noting the desirability of elasticity, even noting the

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"elasticity of the tape is a valuable feature" of the invention (See, e.g., Oace, 3:69-75). As a second example, Oace is intended to serve as an electrical insulator. The incisions or slits in Guenther's layer would seriously undermine any resulting tape's insulating properties. These inconsistencies highlight the incompatibility of the Guenther and Oace references and the futility of the suggested combination. Thus, because the combination suggested would improperly render the individual references unsuitable for their intended purposes, the rejection is overcome.

Finally, the Office cited Guenther's teaching of a "polymer layer (11) having a thickness of 50-500 microns" as meeting the claimed polymer layer having thickness between 0.020" and 0.065" in claim 12. In addition to the deficiencies noted above, readily available conversion tables show that the 50-500 micron range disclosed by Guenther is less than and does not include the claimed range of between 0.020" and 0.065" of claim 12.¹ Therefore, the references fail to teach each and every element of claim 12.

3. Claims 7, 10, and 11 are not an obvious combination of Oace in view of Hughart and Guenther

The Office has rejected claims 7, 10, and 11 under 35 U.S.C. § 103(a) as being unpatentable over Oace in view of Hughart and Guenther.

Claims 7, 10, and 11 are directed to an adhesive tape comprising a polymer layer with a Shore A Hardness of between about 92 to 100. As discussed above in regard to the Office's rejection of claims 1-9 and 10-11, Hughart is not properly combined with Oace. For the same reasons, Hughart is not properly combined with Guenther to form the basis of a rejection under 35 U.S.C. § 103. Further, even if Hughart were properly combined with Oace and Guenther, it

¹ 500 microns = 0.019685 inches.

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fails to disclose a polymer layer of an adhesive tape, but rather discloses a “spacer” that is “adapted to define air gaps between the studs and the wall panel” of the sound-deadening walls taught by Hughart. Finally, the Office refers to “the invention of Maurer,” as rendering the claims unpatentable when combined with Guenther. Presumably, the Office intended to cite to either or both of Oace or Hughart, and not Maurer (presumably U.S. Patent No. 5,839,977, issued to Maurer) since Maurer is not mentioned elsewhere in the October 19, 2006 Office Action and is not discussed in any detail. However, even if the Examiner’s intent was to combine Maurer with Guenther, the combination of the two would not render the claims unpatentable as the Examiner has acknowledged that Maurer fails to teach an adhesive tape having thickness of “between 0.020 and 0.065 inches....” (October 18, 2005 Office Action at p.3). Instead, Maurer discloses a stepped tape configuration where the first step has a thickness of 0.008 inches, the second has a thickness of 0.028 inches, and the third step has a thickness of 0.048 inches. (Maurer at 12:66-67). This does not meet the limitations of claims 7 and 10 requiring a “substantially uniform thickness between 0.020” to 0.065”, nor does it meet the requirement of claim 11 that the adhesive tape have an average thickness of between 65 millimeters and 69 millimeters. Therefore, no combination of Oace, Hughart, Guenther, or Maurer render claims 7, 10, and 11 unpatentable.

D. Conclusion

The Appellant submits that the pending claims are allowable and urges allowance of the claims at an early date.

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The Commissioner is hereby authorized to charge any additional fees, or credit any overpayment to Deposit Account No. 02-2051, referencing Attorney Docket No. 29006-2.

Respectfully submitted

Dated: 19 MAR 2007

By: 

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VIII. CLAIMS APPENDIX

1. (previously presented) An adhesive tape comprising:
a polymer layer having a Shore A Hardness of between about 92 and 100 and a substantially uniform thickness of between about 0.020" to 0.065"; and
a layer of adhesive attached to said polymer layer.
2. (original) The adhesive tape of claim 1, further comprising a substrate attached to an outermost side of said layer of adhesive.
3. (original) The adhesive tape claim of claim 1, wherein said polymer layer includes a textured surface.
4. (original) The adhesive tape of claim 1, wherein said polymer layer is comprised of a polyvinyl chloride.
5. (original) The adhesive tape of claim 1, wherein said polymer layer includes coloring pigment.
6. (original) The adhesive tape claim of claim 4, wherein said polyvinyl chloride comprises a clear polymer.
7. (previously presented) The adhesive tape claim of claim 1, wherein said adhesive comprises a rubberized double-sided tape.
8. (cancelled)
9. (previously presented) The adhesive tape claim of claim 1, wherein said polymer layer has a Shore A Hardness of between about 93 and 97.
10. (original) The adhesive tape of claim 1, wherein said adhesive is pressure sensitive.
11. (previously presented) An adhesive tape comprising:

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a polymer layer having a Shore A Hardness of between about 92 and 100; and

a layer of pressure sensitive adhesive comprising a first side and an opposed second side, the first side being in direct and uninterrupted contact with the polymer layer where the adhesive tape comprises an average thickness between 65 mil and 69 mil.

12. (previously presented) An adhesive tape for application to a flooring environment comprising:

a polymer layer having a thickness between 0.020" and 0.065", the polymer layer defining a first side; and

a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment;

where the adhesive tape has a peel adhesion greater than 2.0 lb/in width.

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IX. EVIDENCE APPENDIX

Attached herewith, please find true and correct copies evidence entered by the examiner and relied upon by the Applicant in this Appeal. Citations to specific portions of these documents may be found in the Applicant's argument in section VII above.

TAB A: October 19, 2006 Office Action

TAB B: Pre-Appeal Brief

TAB C: Guenther Reference

TAB D: Maurer Reference

TAB E: Hughart Reference

TAB F: Oace Reference

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X. RELATED PROCEEDINGS APPENDIX

None

A

Office Action Summary	Application No. 10/674,108	Applicant(s) GOECKE, THOMAS R.	
	Examiner Nasser Ahmad	Art Unit 1772	

— The MAILING DATE of this communication appears on the cover sheet with the correspondence address —

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☒ Responsive to communication(s) filed on 26 June 2006.

2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.

3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) 1-7 and 9-12 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5) ☐ Claim(s) _____ is/are allowed.

6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.

7) ☐ Claim(s) _____ is/are objected to.

8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.

10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____	4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s)/Mail Date _____ 5) <input type="checkbox"/> Notice of Informal Patent Application 6) <input type="checkbox"/> Other: _____
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DETAILED ACTION

Response to Amendment

1. Applicant's request for reconsideration of the finality of the rejection of the last Office action is persuasive and, therefore, the finality of that action is withdrawn.

The withdrawal notice was mailed on 8/3/2006 and was based on the pre-Appeal Brief request made by the applicant on 6/26/2006.

Rejections Withdrawn

2. Claims 1- 6 and 9 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer (5839977) made in the last Office action of 3/23/2006 has been withdrawn in view of the request for pre-Appeal Brief filed on 6/26/2006.

3. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Guenther (6461715) made in the last Office action of 3/23/2006 has been withdrawn in view of the request for pre-Appeal Brief filed on 6/26/2006..

4. Claims 7,10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Maurer in view of Guenther made in the last Office action of 3/23/2006 has been withdrawn in view of the request for pre-Appeal Brief filed on 6/26/2006.

Response to Arguments

5. Applicant's arguments with respect to claims 1-7 and 9-12 have been considered but are moot in view of the new ground(s) of rejection.

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Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1- 6, 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oace (2559990) in view of Hughart (6668501).

Oace relates to an adhesive tape comprising a polymer backing film of 4 to 20 mils thickness (col. 4, lines 21-22) and an adhesive layer contacting the backing film (col. 5, lines 44-47). The backing can be polyvinyl chloride (col. 4, lines 43-60). However, Oace fails to expressly teach that the backing film has a Shore A Hardness of 92-100.

Hughart discloses an adhesive tape comprising a backing (36) of polymeric material such as polyvinyl chloride having Shore A Hardness of 92 and an adhesive layer attached thereto (col. 2, lines 38-45). Figures 1 and 3 shows the backing to be of substantially uniform thickness. Therefore, it would have been obvious to one having ordinary skill in the art to utilize Hughart's teaching of providing an adhesive tape backing of polyvinyl chloride having a Shore A Hardness of 92 in the invention of Oace with the motivation to provide for hardness imparted for structural strength to the tape. For claim 2, Hughart teaches a substrate (30) is attached to the outermost side of the adhesive layer.

Regarding claim 3, the presence of a textured surface on the backing is inherent of the backing to be able to bond to the adhesive layer.

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Claim 5 is disclosed in col. 7, lines 66-67, wherein pigments can be added to the backing layer.

For claim 6, the tape backing is of polyvinyl chloride material is well in the art to be transparent (col. 7, lines 43-44).

For claim 9, it would have been obvious optimization, based on routine experimentation, to provide the backing of Hughart to have Shore A Hardness of 93-97 for optimizing the hardness of said backing polymer layer.

8. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oace in view of Guenther (6461715).

Oace, as discussed above fails to teach that the peel adhesion of the adhesive layer is greater than 2.0 lb/in width. Guenther relates to an adhesive tape comprising a polymer layer (11) having a thickness of 50-500 microns (col. 7, lines 19-25) and a first side of the polymer layer has a double-sided adhesive layer (12) because it has two sides of adhesive surface. As shown in figure-2, one side of the adhesive layer is in substantially continuous contact with the first side of the polymer layer. The adhesive tape can be a pressure sensitive adhesive tape, including rubber-based adhesive (col. 8, lines 36-40). The tape has a peel adhesion of at least 3.5 N/cm (col. 8, lines 10-16), which would include the claimed peel adhesion of greater than 2.0 lb/in width. Therefore, it would have been obvious to one having ordinary skill in the art to utilize guenther's teaching by providing the adhesive layer to have a peel adhesion of at least 3.5 N/cm, which

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includes the claimed range of "greater than 2.0 lb/in width, in the invention of Oace with the motivation to provide for improved peel adhesion.

The intended use phrases such as "for application", "to adhere", etc. have not been given any patentable weight because said phrases are not found to be of positive limitations

9. Claims 7,10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oace in view of Hughart and Guenther

Oace and Hughart, as discussed above, fails to teach that the adhesive is a rubberized double-sided tape. Guenther, also discussed above, relates to a double-sided pressure sensitive adhesive (PSA). Therefore, it would have been obvious to one having ordinary skill in the art to utilize Guenther's teaching of using a double-sided rubberized pressure sensitive adhesive tape in the invention of Maurer with the motivation to provide for enhancing its peel adhesion characteristics.

Conclusion

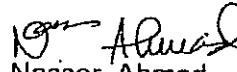
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nasser Ahmad whose telephone number is 571-272-1487. The examiner can normally be reached on 7:30 AM to 5:00 PM, and on alternate Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Harold Pyon can be reached on 571-272-1498. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


Nasser Ahmad 10/16/06
Primary Examiner
Art Unit 1772

N. Ahmad.
October 16, 2006.

Notice of References Cited	Application/Control No. 10/674,108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.	
	Examiner Nasser Ahmad	Art Unit 1772	Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-2,559,990	07-1951	OACE RALPH J; et. al.	428/337
*	B	US-6,668,504	12-2003	Hughart, Jeffrey S.	52/481.1
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	
	V	
	W	
	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

B

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of : THOMAS R. GOECKE Examiner : NASSER AHMAD
Application No. : 10/674,108 Group Art : 1772
Filing Date : SEPTEMBER 29, 2003 Docket No. : 29006-2 (new)
Confirmation No. : 2438
Title : ADHESIVE TAPE

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Dear Examiner:

This cover sheet is in lieu of PTO/SB/33.

Applicant requests review of the Final Rejection in the above-identified application. No amendments are being filed with this request.

This request is being filed with a concurrent Notice of Appeal. The review is requested for the reasons stated below (5 pages or fewer).

In re Goecke
Ser No.: 10/674,108, Filed: 9/29/03
Docket No.: 29006-2
Pre-Appeal Brief Request for Review

CLAIM SUMMARY

Claims 1-6 and 9 have been rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 5,839,977 to Maurer ("Maurer");

Claim 12 stands rejected under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent 6,461,715 to Guenther ("Guenther"); and

Claims 7, 10 and 11 have been rejected under 35 U.S.C. §103(a) as being unpatentable over Maurer in view of Guenther.

REMARKS

Applicant respectfully traverses the final rejection of all the claims presently of record. To conform with the guidelines of the Pre-Appeal Brief Conference Pilot Project, Applicant limits the remarks here to those items believed to be clearly erroneous as set forth below.

As to Claims 1-6 and 9, the Office fails to make a prima-facie showing of obviousness. Specifically, the Office equates the claimed element "polymer layer" with the base member (54) of the Maurer reference. The Office concedes that Maurer teaches its base member as having a thickness of 0.08 to 0.14 inches (Final Office Action dated 3/23/06, paragraph 5, line 5). As this taught range clearly does not encompass the claimed range of 0.020 to 0.065 inches, the Office identified a different feature in the Maurer reference. Instead of continuing to reference the thin base member, the Office shifted its attention to an embodiment having a stepped configuration (Figure 14) showing an appliqué (98) evenly divided into thirds. The thickest portion, that is the third identified by reference numeral 112, is disclosed as having a thickness of 0.048 inches.

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The Office concludes that since this portion was within the claimed range, that Claim 1 was an obvious combination.

This is incorrect for several reasons. First, claim 1 calls for, among others, a polymer layer having a substantially uniform thickness....” The multi-stepped feature of Figure 14 clearly does not meet the substantially uniform limitation. Here, the Office has merely located a protrusion within the claimed range and disregarded the multi-stepped features including the presence of the two thinner steps.

Second, the claim calls for, among others, a polymer layer having a thickness of between about 0.020” to 0.065”. While Maurer may teach a substantially uniform polymer layer in the element identified as the base member (54), there is no motivation to double or quintuple its thickness to reach the claimed range.

Additionally, the change suggested by the Office, providing a substantially uniform thickness (that is without protrusions), would render Maurer unfit for its intended purpose. Specifically, the protrusions taught by Maurer are employed to control the spin imparted on a hockey puck (column 9, line 52 bridging to column 10, line 5). Removing the protrusions (that is, leaving a substantially uniform thickness on the polymer layer) would destroy Maurer’s intended use.

Alternatively, if the embodiment illustrated by Figure 14 were altered to a substantially uniform thickness, again the reference would be rendered unfit for its intended purpose. In this instance, the defect is revealed by the varying thickness of the neighboring ridges of the Figure 14 embodiment being intended to deflect a hockey puck in a downward direction. That is,

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toward the surface of the ice (column 13, line 46-53). Were the ridges uniformly thick, as claimed, the puck's deflection angle would be merely a function of spin and angle of incidence.

Therefore, the rejection of Claims 1-6 and 9 are clearly improper, and the rejection should be withdrawn and the claims passed to allowance.

Regarding Claim 12, the Office posits that Guenther's teaching of a 500 micron backing (11) meets the claimed thickness of between 0.020 and 0.065 inches. This is incorrect. Readily available conversion tables reveal that 500 microns is less than 0.020 inches¹. Thus, Guenther does not teach a thickness within the claimed range and the rejection should be withdrawn and the claim passed to allowance.

Regarding Claims 7, 10 and 11, the Office has made no attempt to show that the combination proposed by the Office is suggested by either Maurer or Guenther. In particular, it is questionable whether an artisan dealing with hockey tape would encounter the teachings described in the diaper affixing apparatus of Guenther. Moreover, as the intended use of the Maurer tape is in close proximity to ice and likely to be employed in cold environments it is questionable that the rubberized double sided tape of Guenther would retain its function.

Additionally, the Office's assertion at paragraph 7 that the motivation to combine the references is to provide for enhanced peel adhesion is unfounded. Maurer appears to be concerned with controlling the direction of a hockey puck rather than improving peel characteristics. Indeed, Maurer appears satisfied with an adhesive "similar or identical" to that used on then current hockey tapes (column 9, lines 41-43). Thus, because there is no motivation

¹ Micron x 0.0000394 = inches
500 x 0.0000394 = 0.019685

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to make the combination proposed by the Office, these rejections are improper and should be withdrawn.

CONCLUSION

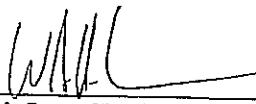
For the reasons above, Applicant believes the final rejection of the claims pending in the present application to be improper. Review, reconsideration and reversal are respectfully requested.

While no fees are believed due, the Commissioner is hereby authorized to charge any necessary fees to Deposit Account No. 02-2051, referencing Attorney Docket No. 29006-2.

Respectfully submitted,

Dated: June 22, 2006

By:



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C



US006461715B1

(12) **United States Patent**
Guenther et al.

(10) Patent No.: **US 6,461,715 B1**
(45) Date of Patent: **Oct. 8, 2002**

(54) **ARTICLE CLOSURE TAPE FOR AN ABSORBENT**

5,354,597 A 10/1994 Capik et al.
5,501,679 A 3/1996 Krueger et al.
5,885,908 A 3/1999 Jaeger et al. 442/59

(75) Inventors: **Werner Guenther, Neuss (DE); Lloyd S. Eynon, Swansea (GB)**

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(73) Assignee: **3M Innovative Properties Company, St. Paul, MN (US)**

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WO	WO 96/10382	4/1996

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

(21) Appl. No.: **09/462,979**

(22) PCT Filed: **Jul. 9, 1998**

(86) PCT No.: **PCT/US98/14228**

§ 371 (c)(1),
(2), (4) Date: **Jan. 14, 2000**

(87) PCT Pub. No.: **WO99/03437**

PCT Pub. Date: **Jan. 28, 1999**

(30) **Foreign Application Priority Data**

Jul. 15, 1997 (EP) 97112042

(51) Int. Cl.⁷ **B32B 3/10**

(52) U.S. Cl. **428/131; 428/136; 428/198; 428/117.3; 428/149; 428/99; 428/343**

(58) Field of Search **428/131, 136, 428/198, 343, 117.3, 149, 99**

(56) **References Cited**

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4,599,265 A	7/1986	Esnoy
4,643,729 A	2/1987	Laplauche 604/389
4,710,536 A	12/1987	Klingen et al.
4,795,456 A	1/1989	Borgers et al.
4,834,820 A	5/1989	Kondo et al.
4,857,067 A	8/1989	Wood et al.
5,344,691 A	9/1994	Hanschen et al.

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Primary Examiner—Blaine Copenhaver

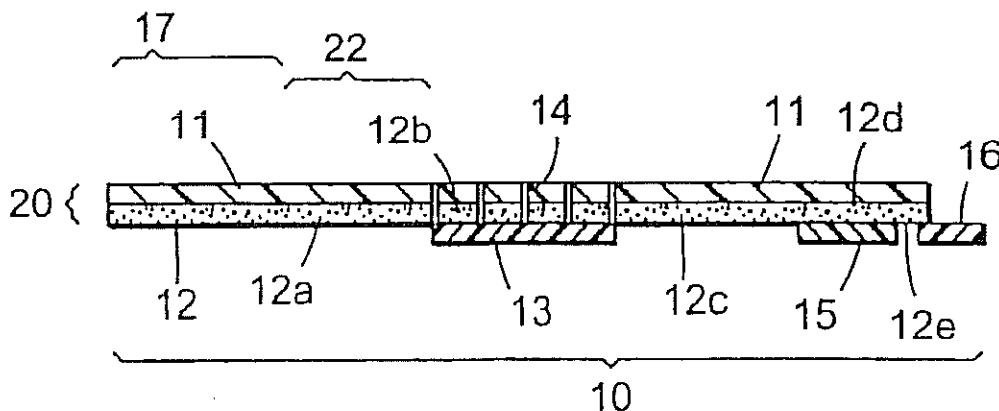
Assistant Examiner—Hai Vo

(74) *Attorney, Agent, or Firm*—Gary L. Griswold; Robert W. Sprague; William J. Bond

(57) **ABSTRACT**

The present invention refers to a closure tape (10) for an absorbent article, particularly for a disposable diaper (1), for fastening of the article on the body of a person, the closure tape being attachable to the outside surface (3) of the diaper (1) through one of its end portions (17) and comprising a backing (11) bearing a continuous or discontinuous adhesive layer (12), a fastening means (15) and a stretchable elastic sheet (13), the backing (11) being essentially non-elastic and/or essentially non-extensible, the support sheet comprising the backing (11) and the continuous or discontinuous adhesive layer exhibiting one or more incisions (14) in the area of the elastic sheet with at least one of the incisions extending in machine direction over the full width of the backing (11) and the end portion (17) being separated from the incision (14) closest to the end portion (7), by a sufficiently large distance (22) to prevent the incisions (14) essentially from opening when attaching the end portion (17) to the outside surface (3) of the diaper (1) and bending the remaining part of the closure tape (10) to contact the inside surface (2) of the diaper (1).

10 Claims, 6 Drawing Sheets



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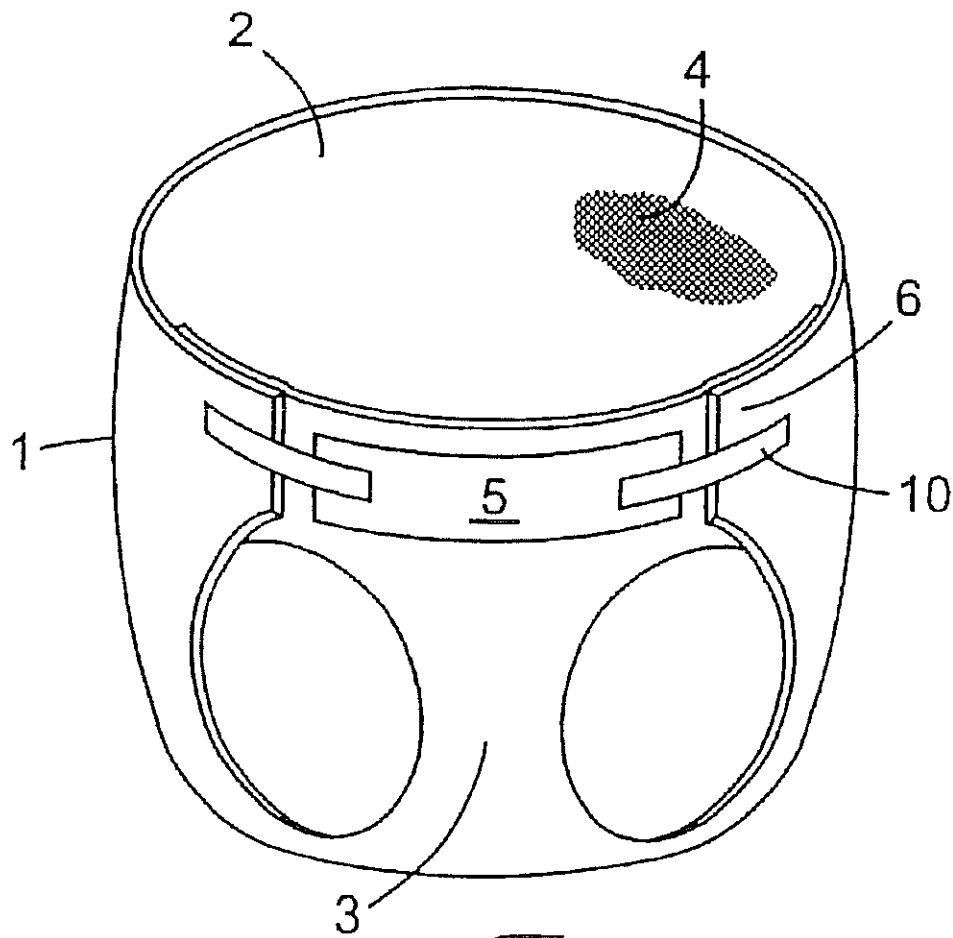


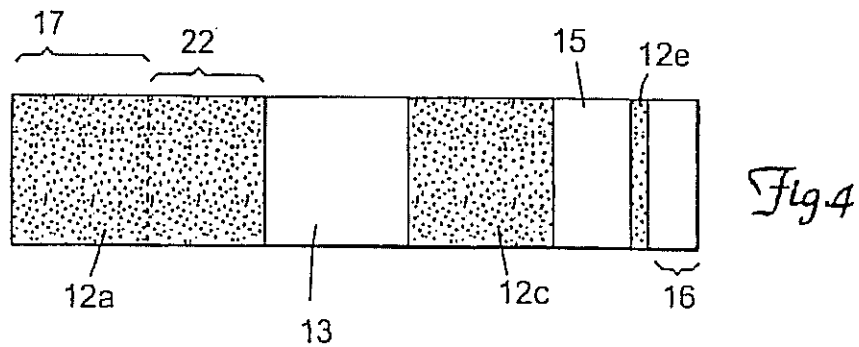
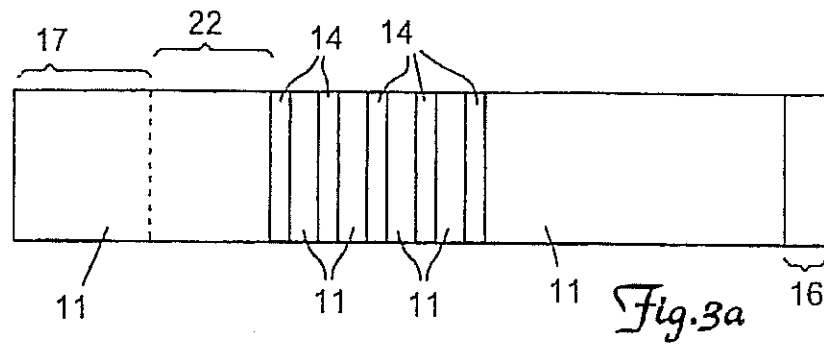
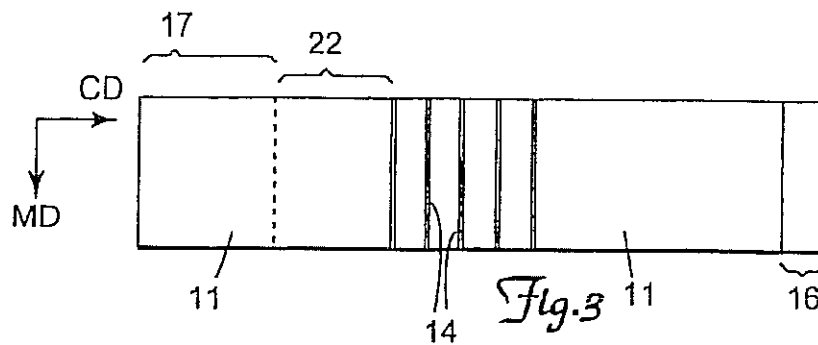
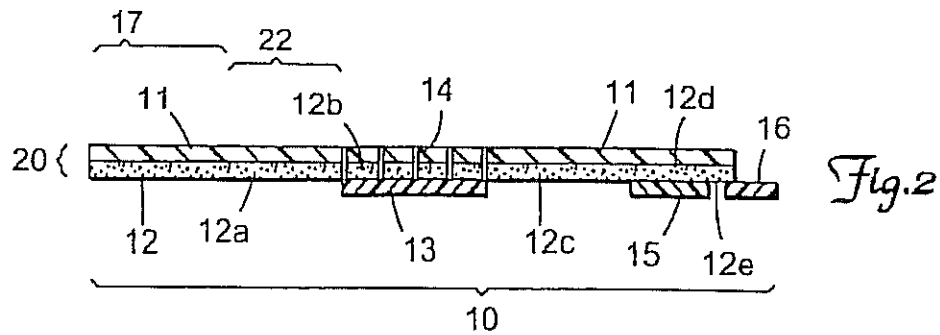
Fig. 1

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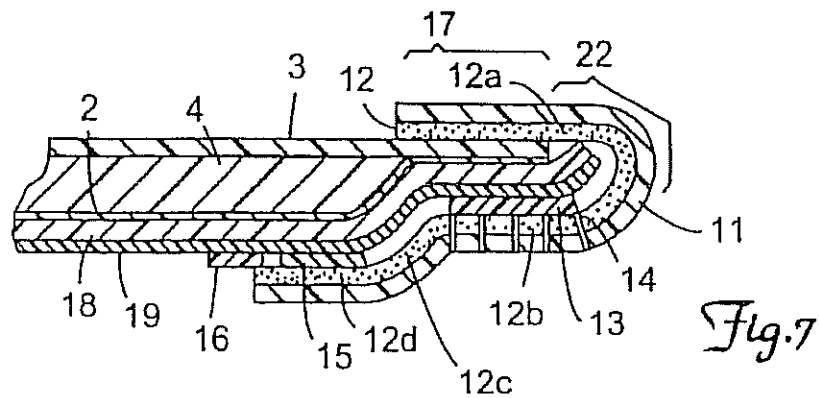
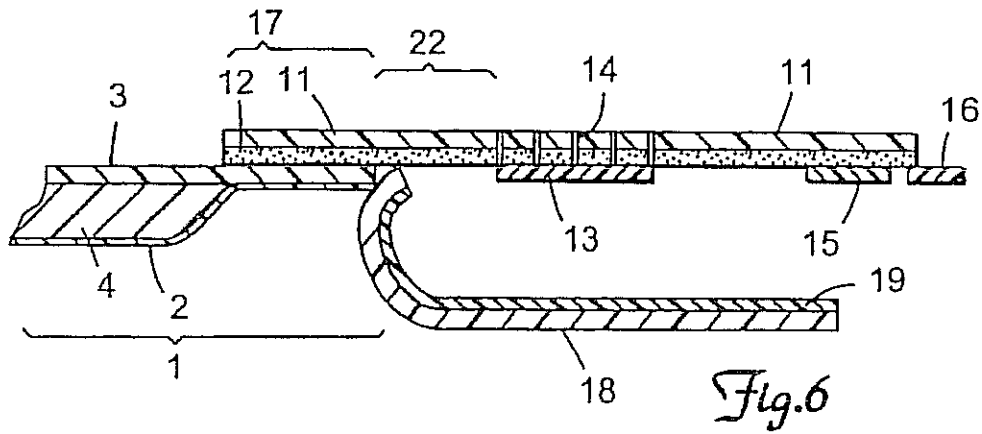
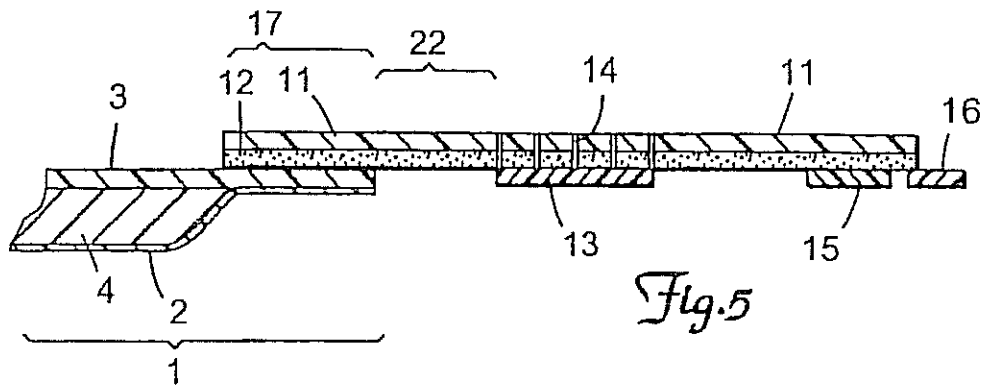


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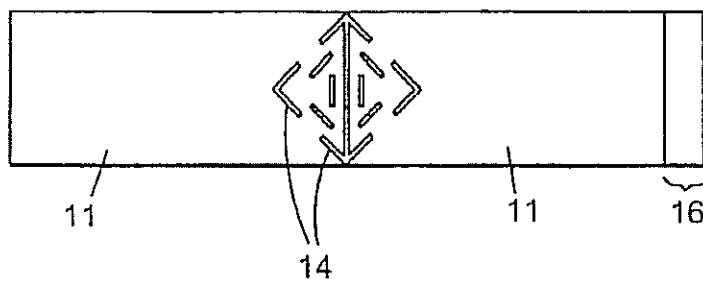
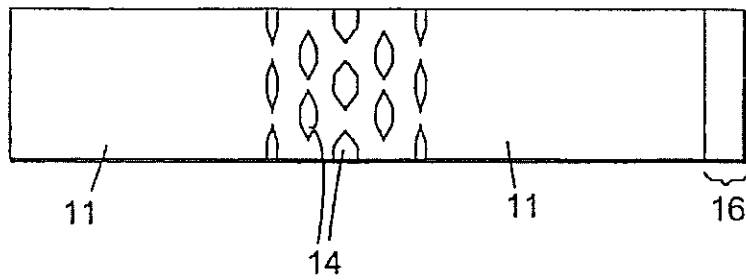
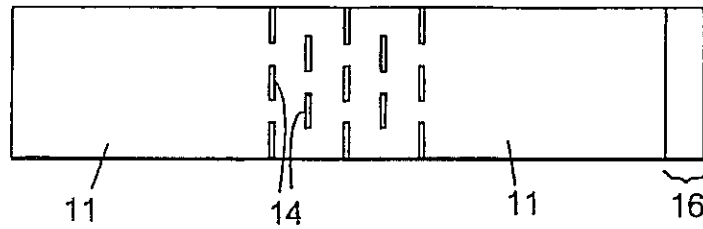
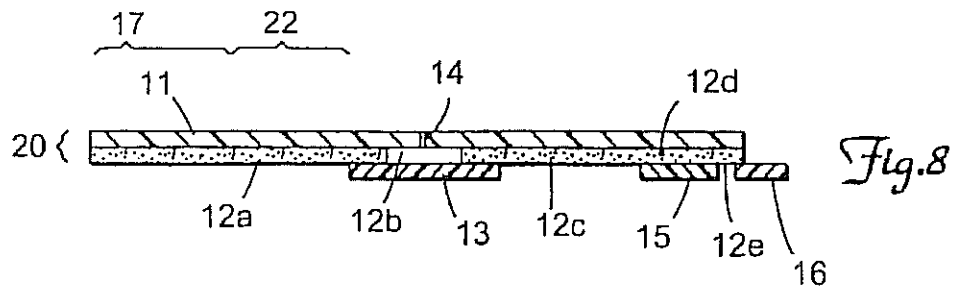


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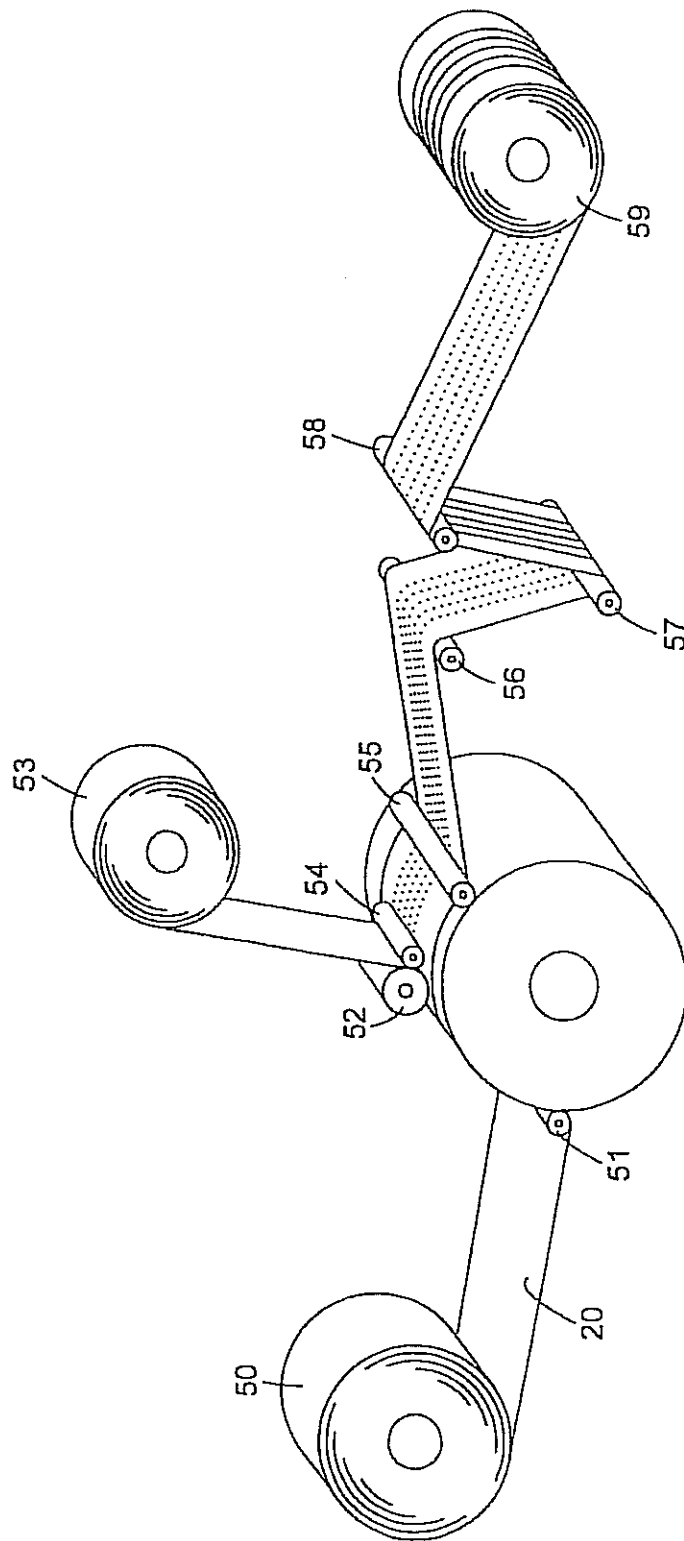


Fig. 11

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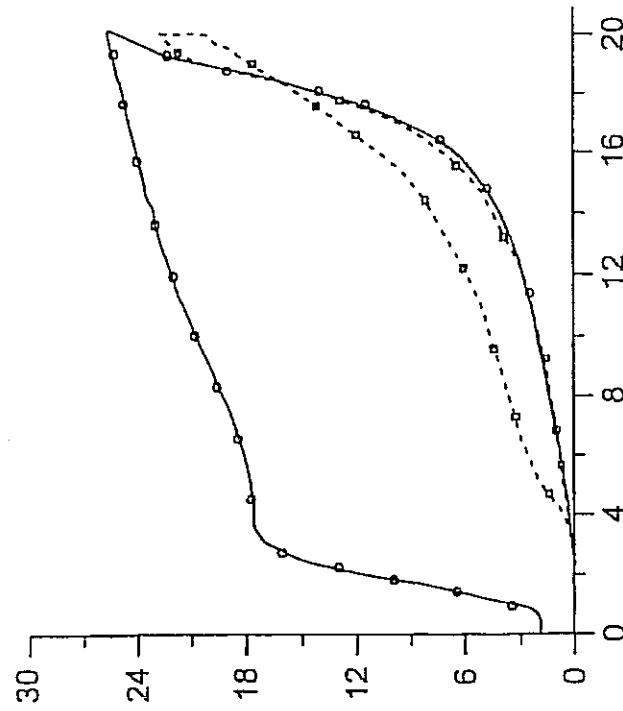


Fig. 13

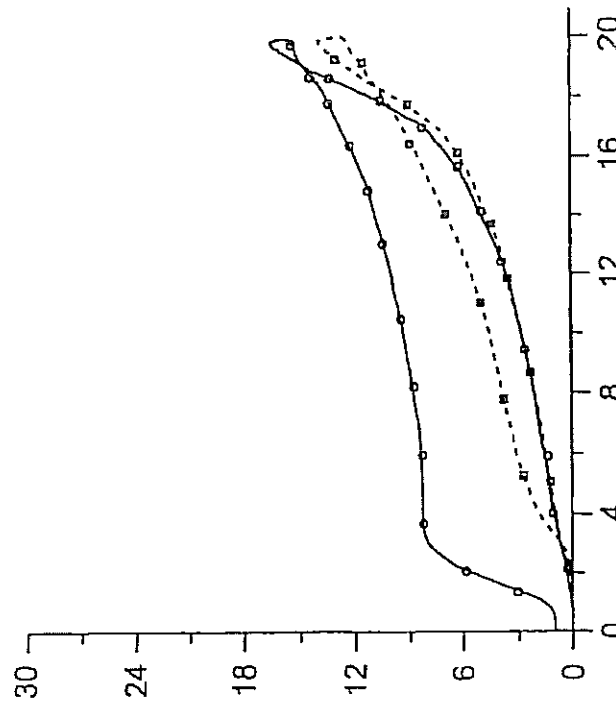


Fig. 12

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ARTICLE CLOSURE TAPE FOR AN ABSORBENT

FIELD OF THE INVENTION

The invention relates to a closure tape for an absorbent article, particularly for a disposable diaper, for fastening of the article on the body of a person, said closure tape being attachable to the absorbent article through one of its end portions and comprising a backing, a fastening means and an elastic sheet to render the closure tape elastically stretchable. The invention furthermore relates to a prelaminated closure tape in a stable roll from which the closure tape can be cut.

BACKGROUND OF THE INVENTION

Absorbent articles such as disposable diapers are provided with closure tapes which are anchored to the absorbent article through one of its end portions by means of, for example, a pressure-sensitive adhesive layer. The opposite end portion of the closure tape comprises a fastening means to close the absorbent article around the wearer's body and fasten the absorbent article on the body. Among these closure tapes, there have also been described elastically stretchable tapes to improve the fit and the comfort of the absorbent article.

U.S. Pat. No. 3,800,796 discloses a diaper with semi-elastic strip fasteners having a freely extensible elastic central segment and two non-extensible inelastic terminal segments. A similar construction is also described in EP 0,249,073 wherein the boundary regions between the elastic middle portion and the two non-elastic end portions are formed by melt-extrusion of both or either of the elastic material and the non-elastic material in order to provide integral bonding between the segments. EP 0,247,855 provides a composite prelaminated closure tape which can be dispensed from a stable roll form to provide a closure with a central elastomeric sheet. The prelaminated closure tape is securely fastened to the inside and outside surface of one edge of the diaper. The attached closure tape comprises a central elastomeric portion and two anchor strips as end portions.

The elastically stretchable closure tapes described in U.S. Pat. No. 3,800,796, EP 0,249,073 and EP 0,247,855 comprise an elastic middle portion between two non-elastic end portions or anchor strips. While these closure tapes are useful and of commercial importance they are sometimes disadvantageous in that the method of preparing them is relatively complicated and requires secure bonding of the tape segments.

In another group of references the elastically stretchable closure tape comprises an elastic backing. U.S. Pat. No. 4,063,559 discloses a disposable diaper with a closure tape having an extendible or stretchable backing made from a variety of materials comprising, for example, plasticized polyvinyl chloride films, polyolefin films, polyurethane films, vinyl chloride and vinylidene chloride copolymer films, rubber hydrochloride films, polyamide films or elastomeric films derived from styrene-butadiene or styrene-isoprene block copolymers. The backing bears an adhesive layer with a partible protective cover means on top of it. The protective cover is substantially coextensive with the adhesive coating when the closure tape is in a non-extended storage position, but is parted when the closure tape is stretched into the working position, thereby making portions of the adhesive coating available for use in securing the diaper to the body of an infant. The protective cover means may comprise discontinuous slits which form discrete aper-

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tures when stretched. Alternatively, the protective cover means may be an embossed, rupturable thermoplastic web or a unitary web provided with spaced, weakened regions which rupture when the web is stretched.

EP 0,191,355 discloses a fastening tape for a disposable diaper comprising a base tape or a backing carrying thereon an adhesive layer wherein the backing when subjected to stress (tension) and subsequently strain (elongation), shows a hysteresis curve with a hysteresis loss ratio of between 20 to 80%. The backing may include a plurality of weakened areas in various geometrical shapes (see FIGS. 9-12), among them discontinuous slits extending orthogonally with respect to the long axis of the backing (cross direction). In an alternative embodiment, EP 0,191,355 describes a fastening tape having two non-elastic end portions and an elastic middle portion made from an elastic material having a hysteresis loss ratio of between 20 to 80%. Using closure tapes with elastically stretchable backings is sometimes disadvantageous because the closure tape which is attached to the diaper may exhibit an insufficient rigidity orthogonal to the long axis of the backing (machine direction) and be floppy.

EP 0,704,196 describes a fastening tape having a stretchable elastic portion which is a sandwich structure of a stretchable elastic tape and a non-elastic backing whereby the elastic tape is secured to the non-elastic backing at least at both ends thereof to bridge a section of the backing which is longer than the elastic tape section and may assume, for example, a zigzag folding shape. If the fastening tape is stretched into a predetermined position, the elastic tape extends and the zigzag-form of the non-elastic backing disappears. The rigidity of the fastening tape in machine direction in the relaxed state is determined by the non-elastic backing. In the construction of EP 0,704,196 it is sometimes difficult to reliably adhere the elastic tape to the zigzag-shaped non-elastic backing.

U.S. Pat. No. 4,834,820 discloses a closure tape having an elastic sheet extending over the whole length of the closure tape and a non-flexible retaining sheet partly bonded to the flexible sheet. The retaining sheet may comprise one or two cut-off grooves. The retaining sheet is ripped apart along the cut-off grooves thus rendering the closure tape elastic, and the central portion of the retaining sheet may be removed in one embodiment (FIGS. 4 and 5). The closure tape is claimed not to interfere with the abdominal respiration of the baby after wearing and eliminates the need for peeling off the tape for checking for urination and stool.

U.S. Pat. No. 4,795,456 discloses an extensible diaper closure tape which comprises an extensible layer 4 uninterruptedly extending over the whole length of the tape. The extensible layer bears on one side a carrier web layer with an unwind release coating the carrier web layer being attached to the flexible layer with a first adhesive layer. The carrier web layer exhibits one or more incisions, and the adhesive layer beneath the slits may or may not be removed. The other side of the extensible layer carries a second adhesive layer which may be slitted in the same area where the first adhesive layer on the opposite side of the extensible layer exhibits an incision. A non-extensible layer bearing on the exposed side a third adhesive layer, is attached to the second adhesive layer. The non-extensible layer is permanently adhered to the second adhesive layer in the area from the manufacturer's end to the incisions, and it is releasably adhered to the second adhesive layer in the area from the user's end to the incisions. The tape is attached to the outside surface of the diaper with the third adhesive layer at the manufacturer's end and bent around the edge portion

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of the diaper thus adhering the user's end with the third adhesive layer to the inside surface of the diaper prior to use. When deployed, the closure tape opens along the release coating between the second adhesive layer and the non-extensible layer which remains adhered to the edge portion of the diaper. The user's end which has been rendered flexible by the deployment can be used to secure the diaper to the wearer. The closure tape of U.S. Pat. No. 4,795,456 is non-extensible in the initial state prior to use but rendered extensible on deployment which is advantageous. On the other hand, the closure tape is secured to the outside surface of the diaper only. This peel mode type of attachment offers a relatively low bonding strength and may fail when securing the diaper around the wearer's body or during use. Prior to deployment, the slits which are in the area where the tape is being bent around the edge portion of the diaper, open at least partly thus rendering the surface of the tape coarse which is less preferred. The slits are furthermore easily contaminated.

Therefore there was a need for an elastically stretchable closure tape which is easy to manufacture and does not exhibit the shortcomings of the closure tapes available in the state of the art or exhibits them to a lower degree only. Other objects of the present invention are evident from the following detailed description of the invention.

SUMMARY OF THE INVENTION

The present invention refers to a closure tape 10 for an absorbent article, particularly for a disposable diaper 1, for fastening of the article on the body of a person, the closure tape 10 being attachable to the outside surface 3 of the diaper 1 through one of its end portions 17 and comprising a backing 11 bearing a continuous or discontinuous adhesive layer 12, a fastening means 15 and a stretchable elastic sheet 13, the backing 11 being essentially non-elastic and/or non-extensible, the support sheet 20 comprising the backing 11 and the continuous or discontinuous adhesive layer 12 exhibiting one or more incisions 14 in the area of the elastic sheet with at least one of the incisions extending in the machine direction (direction orthogonal to the long axis of the closure tape) over the full width of the backing 11, and the end portion 17 being separated from the incision 14 closest to 10 the end portion 17, by a sufficiently large distance 22 to prevent the incisions 14 essentially from opening when attaching the end portion 17 to the outside surface 3 of the diaper 1 and bending the remaining part of the closure tape 10 to contact the inside surface 2 of the diaper 1.

The invention furthermore refers to a prelaminated closure tape in a stable roll from which the closure tape 10 according to the invention can be cut, and to an absorbent article, in particular a diaper 1, comprising a closure tape according to the invention.

BRIEF DESCRIPTION OF FIGURES

FIG. 1 is a perspective representation of a disposable diaper 1 in a closed form, said diaper having an absorbent core 4 between an inside surface 2 and an outside surface 3, closure tapes 10 anchored to the edge portions 6 of the diaper and fastened to the target area 5 on the outside surface of the diaper.

FIG. 2 is a cross-sectional view of a preferred embodiment of the closure tape 10 in the relaxed state (no tension forces applied), said closure tape having a support sheet 20 comprising a backing 11 bearing a continuous adhesive layer 12 in areas 12a-12e, an elastic sheet 13, fastening means 15,

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a finger-lift 16 and incisions 14 in the area 12b of the elastic sheet 13. The manufacturer's end 17 is separated from the incision 14 closest to it, by the distance 22, and the user's end 21 comprises the fastening means 15, the adhesive area 12e and the finger-lift 16.

FIG. 3 is a top view of the embodiment of the closure tape 10 of FIG. 2 in the relaxed state, showing the backing 11 bearing parallel incisions 14 in the area 12b of the elastic sheet 13 which extend over the full width of the closure tape 10 in the machine direction.

FIG. 3a is a top view of the closure tape 10 of FIG. 2 with a tension force being applied, showing that the incisions 14 have split apart to form essentially rectangular and essentially equally spaced openings.

FIG. 4 is a bottom view of the embodiment of the closure tape 10 of FIG. 2 in the relaxed state showing the exposed continuous adhesive layer 12 in areas 12a, 12c and 12e, the end portion 17 of the closure tape to be attached to the outside surface 3 of the disposable diaper, the elastic sheet 13, the fastening means 15 and the finger-lift 16.

FIG. 5 is a schematic cross-sectional view of the embodiment of the closure tape 10 of FIG. 2 (relaxed state) being attached to the outside surface 3 of the diaper only in a peel mode type of attachment.

FIG. 6 is a schematic cross-sectional view of the embodiment of the closure tape of FIG. 2 (relaxed state) which is attached to the outside surface 3 of the diaper 1 and which is additionally attachable to the inside surface 2 of the diaper 1 by means of release sheeting 19 bearing adhesive layer 18 to provide for a shear mode type or Y type of attachment.

FIG. 7 is a schematic cross-sectional view of the embodiment of the closure tape of FIG. 2 before deployment with the closure tape 10 being folded over to contact the inside surface 2 of the diaper 1.

FIG. 8 is a cross-sectional view of another preferred embodiment of the closure tape 10 in the relaxed state, said closure tape 10 having a support sheet 20 comprising a backing 11 bearing a discontinuous adhesive layer in areas 12a, 12c, 12d and 12e, an elastic sheet 13, a fastening means 15, a finger-lift 16 and one incision 14 in the area 12b of the elastic sheet 13.

FIG. 9 is a top view of a closure tape in the relaxed state which is not an embodiment of the closure tape 10 of the present invention, said closure tape comprising a backing 11 having partial incisions 14 in the area of the elastic sheet 13, said partial slits being arranged in lines whereby the partial incisions of one line face the bridges between the partial incisions in an adjacent line.

FIG. 9a is a top view of the closure tape of FIG. 9 with a tension force being applied, showing that the incisions have split apart to form essentially hexagonal openings, whereby the extension of the openings in cross direction is smaller for openings located in the outer lines.

FIG. 10 is another embodiment of a closure tape 10 of the present invention (relaxed state) having in the area 12b of the elastic sheet 13 one full central incision and a number of partial incisions which are arranged to give the configuration of a parallelogram in the area 12b of the elastic sheet 13.

FIG. 11 is a schematic representation of a laminator for preparing laminates useful as precursors of closure tapes 10 of the present invention, said laminator comprising a supply roll 50 for the support sheet 20 comprising the backing 11 bearing the continuous or discontinuous adhesive layer 12, a rotary cutting wheel 52 for slitting the support sheet, a supply roll for the elastic sheet 13, a bonding roll 54 for

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bonding the elastic sheet to the support sheet, rollers 51, 55, 56, 57 and 58, and a storage roll 59 for the laminate.

FIG. 12 is a hysteresis loss curve recorded for a laminate as shown in FIG. 9 having a backing 11 bearing a continuous adhesive layer 12, an elastic sheet 13 in area 12b and five parallel, equally spaced full incisions in the area 12b.

FIG. 13 is a hysteresis loss curve recorded for a laminate as shown in FIG. 10 having a backing 11 bearing a continuous adhesive layer 12, an elastic sheet 13 in area 12b and partial incisions arranged in five parallel and equally spaced lines in the area 12b.

DETAILED DESCRIPTION OF THE INVENTION

The closure tapes 10 of the present invention are useful and beneficial when attached to an absorbent article and, in particular, to a disposable absorbent article. As used herein, the term "disposable absorbent article" refers to articles which are placed against or in proximity to the body of the wearer to absorb and contain the various exudates discharged from the body and which are intended to be disposed of after single use (i.e., they are not intended to be laundered or otherwise restored or reused).

A preferred embodiment of the disposable absorbent article of the present invention is a diaper. As used herein, the term "diaper" refers to a garment generally worn by infants or incontinent persons that is drawn up between the legs and fastened about the waist of the wearer.

FIG. 1 is a partially cut-away perspective representation of a disposable diaper 1 in a closed form. The diaper comprises an absorbent core 4 between an inside surface 2 and an outside surface 3. The absorbent core 4 may be any means which is generally compressible, conformable, non-irritating to the wearer's skin, and capable of absorbing and retaining liquids and certain body exudates.

The outside surface 3 of the diaper is impervious to liquids and is preferably manufactured from a thin plastic film, although other flexible liquid impervious materials may also be used. The outside surface 3 prevents the exudates absorbed and contained in the absorbent core 4 from soiling articles which contact the diaper 1 such as bedsheets and undergarments.

The inside surface 2 of the diaper is compliant, soft-feeling, and non-irritating to the wearer's skin. Further, the inside surface 2 is liquid previous permitting liquids to readily penetrate through its thickness. A suitable inside surface 2 may be manufactured from a wide range of materials such as porous foams, reticulated foams, apertured films, natural fibers (e.g., wood or cotton fibers), synthetic fibers (e.g., polyester or polypropylene fibers) or from a combination of natural and synthetic fibers. Preferably, it is made of a hydrophobic material to isolate the wearer's skin from liquids retained in the absorbent core 4. A suitable inside surface 2 may be, for example, a spunbond or carded polypropylene nonwoven of approximately 15-25 g/m².

The absorbent core 4 may be secured to the outside surface 3 by means of, for example, pressure-sensitive adhesives, hot melt adhesives or other adhesives, ultrasonic bonding or heat/pressure sealing. The outside surface 3 and the inside surface 2 may be joined to each other directly or indirectly by using an intermediate fixing member to which the outside surface 3 and the inside surface are affixed. The inside surface 2 and the outside surface 3 may be associated together by various means comprising, for example, pressure-sensitive adhesives, hot melt adhesives or other adhesives, ultrasonic bonding and/or heat/pressure.

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The above description of the diaper 1 is meant to be explanatory only and not limiting. Further details on diapers and their construction are described in literature and may be taken, for example, from EP 0,529,681, U.S. Pat. No. 4,036,233, EP 0,487,758, WO 96/10,382, U.S. Pat. No. 3,800,796, EP 0,247,855 or U.S. Pat. No. 4,857,067.

The closure tape 10 is secured to the edge portion 6 of the diaper 1. The closure tape 10 can be attached only to the outside surface 3 of the diaper as shown in FIG. 5 or both to the outside surface 3 and inside surface 2 of the diaper as can be taken from FIG. 6 in order to anchor the closure tape 10 to the diaper 1. The anchoring mode shown in FIG. 5 is termed as peel mode type attachment offering a relatively low bonding strength. Peel mode type anchored closure tapes 10 may loosen when attaching the diaper to the wearer's body and during use so that this type of attachment is usually less preferred. The closure tape 10 shown in FIG. 6 is additionally attachable to the inside surface 2 of the diaper by means of release sheeting 19 bearing adhesive layer 18 to provide a shear mode or Y mode type of attachment. This type of anchoring reliably secures the closure tape 10 to the diaper and is preferred.

Alternatively the manufacturer's end can be bonded in between the outside surface 3 and the inside surface 2 of the diaper.

In the closed state of the diaper 1, the fastening means 15 of the closure tape 10 is attached to the target area 5. The target area 5 may be formed of an additional strip which is attached to the outside surface 3 of the diaper 1 in such a manner that the size of the diaper or garment may be adjusted in accordance with the size of the user. The target area can comprise one or more such strips and could also form the entire outside surface 3 of the diaper. The outer surface of the target area 5 is selected to engage with the fastening means 15 of the closure tape 10 in an overlapping configuration to provide a secure side closure. For example, in case the fastening means 15 is a mechanical fastening means and comprises a hook material, the outer surface of the target area will comprise any suitable material which interlocks with hook material such as, for example, woven or non-woven fabrics.

The absorbent article and, in particular, the disposable diaper 1 of the present invention differs from prior art contoured absorbent articles in that it comprises a novel closure tape 10. Reference is made to FIG. 2 which shows a cross-sectional view of a preferred embodiment of the closure tape.

The closure tape 10 of FIG. 2 comprises a backing 11 which is preferably selected from a group of materials which is essentially non-elastic and imparts a desirable stiffness to the closure tape 10.

For the purposes of the present invention a material is considered to be elastic in a given direction if a sample of the material (dimensions 25 mm×18 mm×0.1 mm) is stretchable in that direction from a first and generally relaxed length (no external tensional forces applied) to a second or expanded length which is at least two times the first length and upon relaxation, will retract to a third length which is no greater than 1.1 times the first length with these figures referring to the second tension-relaxation cycle. Materials which irreversibly deform when a sample of the material (dimension 25 mm×18 mm×0.1 mm) is stretched in a given direction from a first and generally relaxed virgin state (no external tension force, no cycle comprising application of tension force and release of tension force applied yet) to a second or expanded state with a length of 1.5 times of the first length

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so that upon release of the tension force the material remains in the expanded state or retracts to a third state that is at least 1.25 of the first length, or which breaks before being stretched to a length of 1.5 times the original length, are termed as non-elastic with respect to the given direction.

Likewise, for the purposes of the present invention, a closure tape 10 having an elastic sheet 13 comprising a material which meets the above definition, is considered to be elastic or elastically stretchable.

For the purposes of the present invention a material is considered to be inextensible in a given direction if a force of at least 60 N has to be applied to stretch a sample of the material (length 100 mm, width 25 mm, thickness 0.1 mm) in that direction irreversibly or reversibly from a first and generally relaxed virgin state (no external tension force, no cycle comprising application of tensional force and release of tension force applied yet) to a second or expanded state with a length of 1.1 times the first length.

The backing 11 is preferably selected from a group of materials comprising polypropylene, polyvinylchloride, polyethylene terephthalate, polyethylene, polyolefin copolymers or blends of polyolefins such as, for example, blend of polypropylene and LPDE (low density polyethylene), non-woven and foamed materials. The thickness of the backing is preferably between 50 μm and 500 μm , and more preferably between 100 μm and 400 μm .

The backing 11 bears an adhesive layer 12 which may extend over the whole length of the closure tape 10 as is shown, for example, in FIG. 2 or which may cover only part of the backing as is shown, for example, in FIG. 8. The adhesive layer 12 may be conceptually divided into different areas 12a-12e whereby area 12a comprises the end portion 17 of the closure tape 10 and the distance 22 between the end portion 17 and the incision 14 closest to it. Area 12b is the part of the adhesive layer 12 in the area of the elastic sheet 13, area 12c corresponds to the area between the elastic sheet 13 and the fastening means 15, area 12d is the part of the adhesive layer 12 in the area of the fastening means 15 and area 12e is the part of the adhesive layer at the end of the closure tape bearing the finger-lift 16.

Part of the area 12a of the adhesive layer is used to anchor the end portion 17 of the closure tape 10 to the outside surface 3 of the disposable diaper as is shown, for example, in FIG. 6. The end portion 17 is also termed as manufacturer's end because it is used to attach the closure tape to the diaper 1 during its manufacture. The opposite end portion 21 of the closure tape 10 comprising fastening means 15, adhesive area 12e and finger-lift 16 is also termed as user's end because it forms the joint made by the user in securing the diaper to the wearer. The remaining part of the area 12a extends over the distance 22 between the manufacturer's end 17 and the incision 14 being closest to it. The adhesive layer 18 attached to the release sheeting 19 may be applied to this part of the adhesive layer 12a as is shown in FIG. 6. The distance 22 is selected to be sufficiently large to prevent the incisions 14 essentially from opening when attaching the manufacturer's end 17 to the outside surface 3 of the diaper 1 and bending the remaining part of the closure tape 10 to contact the inside surface 2 of the diaper 1 as is shown in FIG. 7. The distance 22 ensures that the incisions 14 remain essentially closed when storing the diaper in the state of FIG. 7 prior to use and prevent the incisions from getting contaminated. Furthermore, the surface of the backing offers an aesthetically pleasant and soft appearance.

The extension of distance 22 depends on the concrete construction of the diaper 1 and the closure tape, and it is

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preferably at least 2 mm, more preferably at least 3 mm and especially preferably at least 4 mm.

The adhesive used in area 12a of the adhesive layer is selected to permanently attach the manufacturer's end 17 to the outside surface 3 of the diaper 1 during its manufacture so that the closure tape is not removed from the outside surface 3 of the diaper when the diaper 1 is used and opened or closed several times. The adhesive useful for area 12a comprises pressure-sensitive adhesives including pressure-sensitive hot-melt adhesives and non-pressure-sensitive adhesives. The pressure-sensitive adhesives which are preferred, are preferably selected to exhibit a 90° peel adhesion from a polyethylene surface as measured according to a slightly modified test method FTM2, FINAT test method no. 2, FINAT Technisches Handbuch, 4. Auflage (1995), pp. 6-7 of at least 3.5 N/cm, more preferably of at least 5 N/cm and especially preferably of at least 6 N/cm. The test method used deviates from FTM2 in that a 150 μm polyethylene film STA-211 (thickness 150 μm , adhered to a stainless steel substrate with a double-sided adhesive film) is used as the test substrate and in that the peel adhesion measurement is performed 2 min after applying the adhesive strip to the substrate. The pressure-sensitive adhesive furthermore preferably exhibits a high value of static shear as measured according to a slightly modified test method FTM8, FINAT test method no. 8, FINAT Technisches Handbuch, 4. Auflage (1995), pp. 15-16 of at least 100 min, more preferably of at least 300 min and especially preferably of at least 500 min to ensure that the diaper does not inadvertently come loose from the wearer's body. The test method used deviates from FTM8 in that a weight of 500 g is used instead of 1000 g, and that the temperature is $38 \pm 2^\circ\text{C}$. instead of $23 \pm 2^\circ\text{C}$. and that the test specimen comprises a synthetic rubber film as described in Example 1 as the test substrate and a propylene backing with a thickness of 110 μm with the adhesive to be tested attached to it as the adhesive strip which bears the weight.

Suitable pressure-sensitive adhesives include rubber-based adhesives (also called rubber-resin adhesives) which comprise natural or synthetic rubber materials and typically also tackifying resins in order to render the rubber materials tacky. Preferred examples of rubber-based pressure-sensitive adhesives are the polystyrene polyisoprene block copolymers tackified with synthetic polyterpene resins. Suitable pressure-sensitive adhesives furthermore include acrylate-based pressure-sensitive adhesives such as, for example, those disclosed in U.S. Pat. No. Re 24,906 or U.S. Pat. No. 4,710,536. The adhesives mentioned above are given only by way of example, and the person skilled in the art can select other adhesives known in the state of the art without any inventive effort. The thickness of the adhesive layer in the adhesive area 12a preferably is between 10 and 200 μm and more preferably between 20 and 100 μm .

The area 12b which corresponds to the area of the elastic sheet 13 may comprise an adhesive layer as is shown, for example, in FIG. 2 or may be essentially free of adhesive as is shown, for example, in FIG. 8.

In the embodiment of FIG. 2 the adhesive used in area 12b preferably is selected to reliably and permanently secure the elastic sheet 13 to the backing 11. The adhesive of area 12b may be pressure-sensitive or non-pressure-sensitive. Pressure-sensitive adhesives are preferred and in an especially preferred embodiment the adhesive of area 12b is the same adhesive as used in area 12a. The thickness of the adhesive layer in area 12b preferably is between 100 μm and 200 μm and more preferably between 20 and 100 μm . It is specifically preferred that the adhesive layer in area 12b has the same thickness as the adhesive layer in area 12a.

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In case the area 12b is essentially free from adhesive the elastic sheet 13 may be bonded to the backing 11 in that the adhesive layers of areas 12a and 12c, respectively, are slightly extended into the area 12b with the extending adhesive sections supporting and adhering the elastic sheet 13 to the backing 11 as is schematically shown in FIG. 8. Alternatively or additionally, the elastic sheet 13 may also be attached to the backing 11 by different methods of welding such as heat welding or ultrasonic welding, respectively. Rotary ultrasonic welding is particularly preferred. Rotary ultrasonic welding devices are commercially available, for example, from Cera, Villars, France, and contact-free ultrasonic welding systems are commercially available from Hermann, Karisbad, Germany. Ultrasonic welding systems are also commercially available from Branson Company, U.S.A. In a specifically preferred embodiment the elastic sheet 13 is attached to the backing by using an adhesive layer extending fully or partly over area 12b additionally securing the ends of the elastic sheet by heat welding or ultrasonic welding and, in particular, by ultrasonic welding.

The area 12c between the elastic sheet 13 and the fastening means 15 may comprise an adhesive layer as is shown, for example, in FIG. 2 or may be essentially free of any adhesive. Using an adhesive in area 12c is especially advantageous in case the fastening means 15 comprises mechanical fastening means such as, for example, hook fastening means which may also be referred to as a male fastening means. Such hook fastening means require corresponding female fastening means such as, for example, fibrous elements of a loop fastening material on the target area to engage with in order to reliably secure the diaper around the wearer. Since the female fastening means is often essentially restricted to the target area 5, it will typically be tucked underneath other portions of the diaper on folding or rolling up the diaper for disposal. An exposed adhesive layer in area 12c can overcome this problem and offer an additional fastening means allowing for convenient disposal of the diaper.

An exposed or partially exposed adhesive layer in area 12c and/or area 12e releasably adheres the closure tape 10 when being bent over to attach the inside surface 2 of the diaper when storing the diaper prior to use (see FIG. 7) to the release sheeting 19. This prevents the closure tape in the bent-over state from "pop-open" which is desirable. Pop-open may also be prevented, for example, by releasably adhering the closure tape 10 to the inside surface 2 of the diaper or the release sheeting 19 by ultrasonic spot welding or spot heat bonding.

The adhesive optionally used in area 12c may be a pressure-sensitive adhesive or a non-pressure-sensitive adhesive. Preferably it is a pressure-sensitive adhesive, and the same adhesive as used in area 12a is preferably used. Optionally when using the adhesive of area 12a in area 12c, this adhesive may be partially deactivated, for example, by corona treatment in order to render the adhesive layer in area 12c less aggressive and removable. Alternatively, it is possible to cover area 12c prior to using it with a release liner which will be removed prior to fastening the rolled-up diaper 1 for disposal. It is furthermore possible to use a different pressure-sensitive adhesive in area 12c which is less aggressive than the adhesive of area 12a and which allows the closure tape 10 to be removably attached to the outside surface 3 of the diaper. Suitable non-permanent acrylate-based pressure-sensitive adhesives are described, for example, in EP 0,736,585, WO 93/13,148 or U.S. Pat. No. 4,599,265. The thickness of the adhesive layer in area 12c preferably is between 10 μ m and 200 μ m and more prefer-

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ably between 20 μ m and 100 μ m. The thickness of the adhesive layer in area 12c, if present, is especially preferably selected to be the same as the thickness of the adhesive layer in areas 12a and, if present, 12b.

The area 12d which corresponds to the area of the fastening means 15 comprises an adhesive layer which can be pressure-sensitive or non-pressure-sensitive. The fastening means 15 can be a mechanical fastening means, such as, for example, a hook material, or another adhesive layer which may be attached to a carrier sheet or directly laminated to the adhesive layer in area 12d. It is also possible that no additional fastening means 15 is attached to the adhesive layer in area 12d and that the adhesive layer in area 12d is used as fastening means 15.

In case an additional fastening means 15 is used, this being preferred, the adhesive used in area 12d preferably is an aggressive pressure-sensitive adhesive material in order to reliably secure the fastening means 15 to the backing 11. The pressure-sensitive adhesive may be selected from the group of adhesives described above for use in area 12a, and the same adhesive is preferably used in areas 12a and 12d. In case the additional fastening means 15 is omitted, the adhesive used in area 12d is selected so that the diaper can be both reliably secured to the wearer's body when being used, and be easily removed after use. The adhesion behavior of the adhesive used in area 12d with respect to the target area 5 is governed both by the nature of the adhesive and the surface properties of the target area 5. In case the adhesive layer of area 12d is used to fasten the diaper to the wearer's body, the target area 5 typically comprises a film which may have a release coating such as, for example, a BOPP film which is commercially available from 3M Company, St. Paul, U.S.A., as Frontal Tape KR-0827 or a cast polypropylene film which is commercially available from 3M Company, St. Paul, U.S.A. as Cast PP Frontal Tape KR-0822. When using an appropriate release surface in target area 5 it is often possible to use aggressive pressure-sensitive adhesives such as those described above for use in area 12a also for the adhesive layer of area 12d in case no additional fastening element 15 is present. Alternatively, the pressure-sensitive adhesive of area 12d may be partially detackified to render it less aggressive and removable from the target area 5.

The area 12e which corresponds to the area between the fastening means 15 and the end of the closure tape 10 carrying the finger-lift 16, usually is at least partly covered with an adhesive layer to reliably secure the finger-lift 16 to the backing 11. In the embodiment of FIG. 2 the area 12e is completely covered with an adhesive layer. The adhesive of area 12e may be a pressure-sensitive adhesive or a non-pressure-sensitive adhesive with a pressure-sensitive adhesive being preferred. Especially preferred are the pressure-sensitive adhesives described above for use in area 12a. Alternatively the backing 11 in area 12e may provide a finger-lift feature if the adhesive in area 12e is omitted; in this case no additional finger-lift is required.

The closure tape 10 preferably has a width or extension in cross direction of between 40 and 100 mm and more preferably of between 50 and 80 mm, and an extension in machine direction of preferably between 15 and 50 and more preferably of between 15 and 30 mm. These dimensions are given only by way of example and other dimensions can be used as well. The ratio of the extension in machine direction over the extension in cross direction is preferably between 0.15 and 0.50 and more preferably between 0.25 and 0.40.

The extensions of areas 12a-12e are highly variable and may be optimized in view of a specific design of a closure

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tape 10 according to the present invention. Area 12a corresponding to the manufacturer's end 17 typically has an extension in cross direction of between 10 and 30 mm and more preferably of between 12 and 25 mm. The dimensions of areas 12b and 12d, respectively, preferably essentially correspond to the dimensions of the elastic sheet 13 and the fastening means 15, respectively, which are given below. The fastening means 15 can be located directly adjacent to the elastic sheet 13 so that area 12c can be omitted. Area 12c preferably has an extension in cross direction of between 0 and 20 mm and, more preferably, of between 0 and 15 mm. The extension of area 12e may in cross direction preferably be between 0 and 10 and more preferably between 0 and 8 mm. Area 12e may be omitted, for example, in case no finger-lift 16 is used or in case a mechanical fastening means 15 is used which simultaneously can provide a finger-lift feature.

The adhesive layer 12 may be present in some or all of the areas 12a-12e and/or may be present in additional areas corresponding to further optional features of the closure tape such as, for example, a release liner to cover the adhesive layer of area 12c.

The adhesive layer 12 can be applied to the backing 11 using different techniques such as, for example, solvent coating, hot-melt coating, spray coating, slot coating, swirl coating and lamination. Discontinuous adhesive layers can be obtained using different techniques such as, for example, strip coating, lamination or screen printing.

The closure tape 10 comprises an elastic sheet which in combination with one or more incisions (also termed as slits) 14 vertically extending from the surface of the backing 11 through the area 12b to the upper surface of the elastic sheet 13, render the closure tape 10 elastically stretchable in cross direction (CD) thus increasing the fit and the comfort of the absorbent article. In case of mechanical fastening means 15, the elastic sheet 13 exerts a restoring force onto the joint formed between fastening means 15 and target area 5 which is advantageous in order to reliably secure, for example, the diaper 1 around the wearer's waist. The cross direction which is shown in FIG. 3 corresponds to the longitudinal symmetry axis of the closure tape 10 and is orthogonal to the machine direction (MD, also shown in FIG. 3) or lateral symmetry axis.

The elastic sheet 13 preferably extends in the machine direction over the full width of the closure tape as is shown in FIG. 3. It is, however, also possible that the elastic sheet 13 extends only partly over the full width of the closure tape in machine direction and exhibits, for example, a triangular shape. It is also possible, though less preferred, that the extension of the elastic sheet 13 in machine direction is less than the full width of the closure tape over the full length of the elastic sheet in cross direction. The extension in cross direction may be varied depending on the elasticity of the material of the elastic sheet 13 and the number and lateral extension (in machine direction) of slits 14. For a given elastic material, the extension of the elastic sheet 13 in the cross direction and the number of slits are preferably chosen to provide an elongation of the closure tape 10 in the cross-direction prior to fastening it to the diaper, i.e. in the state shown in, for example, FIG. 2, of at least 5%, more preferably of at least 7% and especially preferably of at least 10% when applying a force of 15 N in cross-direction during the first elongation. The ratio of the extension of the elastic sheet 13 in the cross-direction over the length of closure tape 10 prior to fastening it to the diaper preferably is between 0.1 and 0.9, more preferably between 0.2 and 0.8 and especially preferably between 0.3 and 0.7. The extension of the elastic

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sheet 13 is cross direction preferably is between 10 and 40 mm and, more preferably between 10 and 25 mm.

The elastic sheet 13 may be made from a group of materials comprising essentially isotropic or essentially anisotropic materials. Useful elastic materials preferably exhibit an elongation at break as measured according to ASTM D 882 in the preferred direction of stretchability of at least 700% or more and, more preferably, of more than 850%.

Preferred essentially isotropically elastic materials include elastomeric polyurethane materials such as, for example, those available under the trademark ESTANE from B.F. Goodrich & Co., natural or synthetic rubber materials such as, for example, ethylene-propylene-dien copolymers (EPDM), styrene-butadiene-styrene block copolymers (SBS), styrene-(ethylene-butylene)-styrene block copolymers (SEBS) such as, for example, those available from the Shell Chemical Company under the trademark KRATON G like, for example, KRATON G-1657. Other elastomeric materials which may be used to form the elastic sheet 13 include elastomeric polyamide materials such as, for example, those available under the trademark PEBAX from the Rilsan Company and elastomeric polyester materials such as, for example, those available under the trade designation Hytrel from E.I. DuPont de Nemours & Company.

When attaching an essentially isotropic elastic material to the backing 11, the elasticity of the laminate in the machine direction will be essentially determined by the non-elastic and/or non-extensible, respectively, backing 11. Therefore essentially isotropically elastic materials can be used for the preparation of the closure tapes 10 of the present invention without rendering it unstable or wobbly in the machine direction.

Preferred essentially anisotropic elastic materials include extruded blends of a block copolymer elastomer portion and a polyolefin polymer portion, respectively, blended in a ratio from 10:1 to 0.4:1, wherein the block copolymer elastomer portion is formed of A blocks and B blocks, the A blocks being predominantly formed of monoalkenyl arenes and the B blocks predominantly of conjugated dienes and wherein the polyolefin polymer portion is comprised predominantly of an inelastic fiber forming polyolefin polymer, copolymer or blend. Such materials are described in copending U.S. patent application Ser. No. 08/720,794 filed by the present applicant on Oct. 4, 1996 now U.S. Pat. No. 5,885,908. JP 51-86,611 discloses extrusion of a blend of an ABA block copolymer with polystyrene where the polymers are exemplified as blended at a ratio of from 50 to 99 percent block copolymer to 1 to 50 percent polystyrene. The resulting material exhibits anisotropic behavior. Other essentially anisotropically elastic materials which are useful in the present invention are described, for example, in U.S. Pat. No. 5,344,691, U.S. Pat. No. 5,501,679 and U.S. Pat. No. 5,354,597.

Anisotropically elastomeric materials which are useful in the present invention preferably exhibit a ratio of the F10 force required to stretch a sheet of the elastomeric material (dimensions 20x25 mm) by 10% into the machine direction over the F10 forces required in the cross direction, of at least 1.5, more preferably of at least 2.0 and especially preferably of at least 2.5.

The elastic sheet 13 can be attached to the backing 11 by the adhesive layer in area 12b, and one or more slits or incisions 14 are applied in the area 12b extending from the outside surface of the backing 11 through the adhesive layer in area 12b to the upper surface of the elastic sheet 13 contacting the adhesive layer.

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The extension of the incisions in the cross direction preferably is less than 10 μm , more preferably less than 50 μm and especially preferably between 10 and 30 μm . It was found that if the extension of the slits is less than approximately 25 μm , essentially no adhesive will be squeezed through the slits 14 on stretching and relaxing the closure tape 10 for several times, for example, for 3–5 times, so that the outer surface of the backing 11 remains essentially clean and is not contaminated with adhesive during use. The slits can be obtained by using a cutting wheel 52 as is shown in FIG. 10. The rotary cutting wheel 52 may comprise 1–8 circular knives separated from each other by typically 1.5–4 mm and results in slits with an approximate width of less than 100 μm and preferably not more than 50 μm . Rotary cutting wheels are commercially available from Dienes Werke, Overath-Vilkerath, Germany. An example of a useful device is described in Example 1. It is also possible to apply the slits by using an approximately focused beam of a laser, such as, for example, of a CO₂ laser.

In the machine direction, the slits 14 may extend over the full width of the tape as is shown, for example, in FIG. 3, or over part of the width only as is shown, for example, in FIG. 10.

When the slits extend over the full width of the closure tape 10 they will open on stretching without deforming or destroying the backing 11 exposing—depending on the construction of the closure tape—essentially rectangular strips of similar width of the adhesive layer of area 12b or the elastic sheet 13, respectively, as is shown in FIG. 3a. The elastic response of the closure tape 10 on stretching is essentially determined by the properties of the elastic sheet whereby the force required to obtain a desired elongation essentially depends on the properties of the elastic material, the number of slits extending over the entire width of the closure tape 10 in machine direction (also termed as full slits or incisions) and the density of slits per length unit.

In case the slits extend over part of the width of the closure tape 10 in machine direction (also termed as partial slits or incisions) as is shown, for example, in the configuration of FIG. 9, they will open on stretching to expose the elastic sheet 13 or the adhesive layer of area 12b, respectively, in openings of an essentially hexagonal shape as is shown in FIG. 9a. In case of such partial slits, the extension of the openings in the cross direction formed on stretching from slits located at different positions in the cross direction is less regular than in the case of full slits. The slits located in the outer lines of slits are being deformed to a lesser extent whereas the slits in the middle lines are stretched most. The response of the closure tape of FIG. 9 on stretching heavily depends on the properties of the non-elastic and/or non-extensible, respectively, backing 11 and is therefore essentially non-elastic. The bridges of the backing 11 between adjacent openings are irreversibly deformed for low elongations of the closure tape of, for example, approximately 5% or less, and the surface of the backing in the area 12b of the closure tape 10 remains rough and uneven on relaxation. Since the inelastic deformation of the backing 11 begins at very low elongations of the closure tape 10 already of, for example, approximately or less than 5%, the force required for initial stretching of the closure tape 10 is essentially determined by the stiffness or tenacity of the backing 11 and therefore usually distinctly higher than the force required for stretching a closure tape comprising at least one full slit by the same elongation.

The closure tapes 10 of the present invention therefore comprise one or more incisions 14 whereby at least one of the incisions extends in machine direction over the full

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width of the backing in the machine direction. The other slits present can be full or partial slits. Partial slits extending over at least 0.6 and, in particular, at least 0.75 of the full width of the closure tape 10 in machine direction are preferred. In a preferred embodiment of the closure tape 10 of the present invention at least 0.5 and, more preferably, at least 0.7 of the total number of slits are full slits. In an especially preferred embodiment of the closure tape 10 of the present invention, all slits are full slits.

The number of slits is preferably selected to give in combination with the elastic properties of the elastic sheet 13, the extension of the elastic sheet 13 in cross direction and the extension of the closure tape 10 in cross direction an elastic elongation of the closure tape 10 of the invention to a length of preferably at least 1.15, more preferably of at least 1.20 and especially preferably of at least 1.50 when stretching the closure tape in cross direction with a force of 15 N.

In case of full slits the number of slits preferably is at least 2, more preferably at least 3 and especially preferably at least 5. The density of slits preferably is between 1–10/cm and, more preferably, between 2–7/cm.

In case of partial slits being arranged in configurations like that in FIG. 10, the number of slits can vary over a wide range and preferably is at least 5, more preferably at least 10 with the density of partial slits being between 1–50/cm and, more preferably, between 1–30/cm.

The slits can be obtained after laminating the elastic sheet 13 to the backing 11 using the adhesive layer in area 12b, but the slits can also be obtained prior to laminating the elastic sheet 13 to the backing 11 in case appropriate measurements are taken to retain the physical integrity of the closure tape. FIG. 11 is a schematic representation of a laminator for preparing a laminate which is useful for preparing a closure tape 10 of the present invention. A backing 11 which is continuously or discontinuously covered with an adhesive layer 12 bearing, however, an adhesive layer at least in part of area 12b to anchor the elastic sheet 13 (see, for example, FIG. 2 and 8), is unwound from supply roll 50 and continuously slitted by rotary cutting wheel 52. An elastic sheet material is unwound from supply roll 33, and laminated to the slitted backing 11 by bonding roll 54 using the adhesive layer in area 12b. The backing 11 is fed to the rotary cutting wheel 52 via roller 51 and kept under tension by bonding roll 54 and roller 55 which is required to hold the strips obtained at the rotary cutting wheel 52 in place. The laminate obtained can then be wound onto storage roll 59.

The laminate prepared in the process of FIG. 11 comprising a backing 11, an adhesive layer at least in area 12b, an elastic layer 13 and slits 14 in area 12b can be processed further to attach a fastening means 15 and, optionally, further features such as, for example, a finger-lift 16, and can then be wound on a storage roll as a prelaminated closure tape in a stable roll from which the closure tape can be obtained by cutting in cross direction.

The fastening means 15 may comprise mechanical fastening means having engaging elements engagable with their contemplary counterpart on the target area 5. A suitable closure system comprises two interlocking means, one of them being a hook (or male) fastener means and the other being a loop (or female) fastener means. The fastening means 15 may comprise the hook fastener or the loop fastener means, respectively, but preferably comprises the hook fastener means. The hook fastener means may have any shape such as hooks, "T"s or any other shape as are well known in the art. The hook fastener material may be

manufactured from a wide range of materials including nylon, polyester, polyolefins or any combination of these. A preferred hook material comprises a base and a plurality of engaging elements which comprise a stem supported at the base and an enlarged head which is positioned at the end of the stem opposite of the base. Such material is commercially available as Microreplicated Hook Material of a Mechanical Hook and Loop System, trade designation KN-2396 from 3M Company, St. Paul, U.S.A.

The loop material may be comprised of woven or non-woven fabric or any other suitable material which interlocks with the contemplated hook fastener material. A suitable loop fastening material comprises a number of fiber loops projecting from a woven backing such as the Knitted Loop Tape EKL-T-1112, commercially available from 3M Company, St. Paul, U.S.A.

Alternatively, the adhesive layer in area 12d may be used as fastening means as was described above.

In a further alternative embodiment, another exposed adhesive layer which may optionally be applied to a carrier sheet, and which is attached to the backing 11 by the adhesive layer of area 12d, can be used as fastening means 15. The exposed adhesive layer is selected to give in combination with the target area 5 the desired adhesion and removability characteristic. The carrier sheet, if present, is selected to permanently bond the exposed adhesive layer to the adhesive layer in area 12d and may be selected, for example, from a group of materials comprising polyesters, polyethylenes, polypropylenes, polystyrenes, polycoated papers, polycarbonates or polymethylmethacrylates. The thickness of the carrier preferably is between 20 and 200 μ m.

The fastening means 15 preferably has an extension in cross direction of between 10 and 40 mm, and more preferably of between 15 and 30 mm. The fastening means may extend over the full width of the closure tape in machine direction over the full length of its extension in cross direction but other configurations are also possible.

The finger-lift 16 may optionally be attached to the user's end to allow for easier handling of the closure tape 10. The finger-lift partly covers the adhesive layer in area 12e, if present, and has an extension in cross direction of typically between 3 and 10. Alternatively the finger-lift 16 may be attached to the backing 11 by different welding techniques such as, for example, ultrasonic welding. The finger-lift typically has a thickness of between 25 and 200 μ m and is preferably prepared from a group of materials comprising polypropylene and polyesters.

DETAILED DESCRIPTION OF THE FIGURES

FIG. 1 shows a partially cutaway perspective representation of a disposable diaper in closed form which is described above.

The details of the closure tape 10 according to the invention are best shown in FIGS. 2-10.

FIG. 2 shows a preferred embodiment of a closure tape 10 according to the invention having a continuous adhesive layer 12 in areas 12a-12e which is attached to a backing 11. The same adhesive is preferably used in areas 12a-12e. The fastening means 15 preferably comprises a mechanical fastening means and, in particular, the hook (male) part of a mechanical closure system. The adhesive layer in area 12c provides an additional disposal feature which allows to secure the diaper filled with exudates after use when it is folded or rolled up in a configuration for disposal. The adhesive layer in area 12c may be covered with a release liner which is removed prior to use but it is also possible for

the adhesive layer in area 12c to be exposed throughout use. The finger-lift 16 may extend over the whole area 12e to adjoin to the fastening means 15 but part of the adhesive layer in area 12e may be exposed, and optionally be covered with release liner.

The fastening surface of the closure tape 10 of FIG. 2 which is reliably and yet removably adhered to the target area 5, is shown in the bottom view of FIG. 4 whereas the top view of FIG. 3 shows the non-bonding top side of the closure tape of FIG. 2, in the relaxed state (no tensile force applied). When stretching the closure tape of FIG. 2 in cross direction, the slits split apart forming essentially rectangular opening as is shown in the top view of FIG. 3a. The openings exhibit an essentially equal extension in cross direction and are essentially equally spaced from each other.

FIG. 5 shows the closure tape of FIG. 2 being attached to the outside surface 3 of a diaper 1 (peel mode type of attachment). The closure tape is preferably additionally secured by adhering release sheeting 19 carrying adhesive layer 18 onto the inside surface 2 of the diaper as is shown in FIG. 6 (shear mode type of attachment). The adhesive of adhesive layer 18 is preferably selected to permanently bond to the inside surface 2 of diaper 1. The release sheet 19 is preferably selected to allow for removable adhesion of the adhesive layer of area 12c and/or of the fastening means 15, respectively. Prior to use the closure tape 10 is folded onto the inside surface 2 of the diaper, and adhering the closure tape 10 to the inside surface 2 of the diaper is preferred in order to prevent the closure tape from "pop-open".

FIG. 7 gives a cross-sectional view of the closure tape of FIG. 2 being bent around the edge portion 6 of the diaper 1 to contact the inside surface 2 of the diaper. The diaper is usually stored prior to use and sold in the configuration of FIG. 7.

A cross-sectional view of an especially preferred embodiment of the closure tape 10 of the invention is shown in FIG. 8. The elastic sheet 13 is adhered to the backing 11 by small adhesive areas extending from area 12a and 12c, respectively, into area 12b whereas area 12b is essentially free of adhesive. The elastic sheet 13 may be additionally secured to the backing 11 by ultrasonic welding or other welding techniques. In the embodiment of FIG. 8 only one full slit may be used because no adhesive layer is present in area 12b and the part of the backing between the full slits would break off. Alternatively, it would be possible to use one full slit and several partial slits. Using no adhesive in area 12b of the closure tape 10 of FIG. 8 may be advantageous in order to avoid any leaking of adhesive through the slits onto the exposed surface of the backing 11.

FIG. 9 is a top view of a closure tape having lines comprising partial slits in the area of the elastic sheet 13 in the relaxed state (no tension force applied). In a line, partial slits and bridges between the slits are alternating and the slits of a line face bridges of the adjacent lines. The closure tape of FIG. 9 does not comprise at least one full slit and is therefore not an embodiment of the closure tape 10 according to the present invention. Upon stretching, the slits of the closure tape of FIG. 9 split apart to form essentially hexagonal openings. The extension of the openings in cross direction is distinctly smaller for slits being located in the outer lines as compared to slits in the middle lines (see FIG. 9a).

FIG. 10 is a top view of another closure tape 10 according to the invention having one central full slit and a number of partial slits which are arranged to give the configuration of a parallelogram.

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FIG. 11 shows a schematic representation of a laminator for preparing a laminate useful for preparing a closure tape 10 according to the present invention. The backing comprising a continuous or discontinuous adhesive layer 12 and at least an adhesive layer in area 12b is unwound from supply roll 50 and fed via roller 51 into the rotary cutting wheel 52. If necessary, the supply roll 50 comprising the backing 11 bearing adhesive layer 12, may additionally comprise a release liner between the adhesive layer and the previous layer of the backing to facilitate unwinding. Such release liner if present is wound on a storage roll which is not shown in FIG. 10. The elastic sheet 13 is unwound from supply roll 53 and continuously laminated to the slitted backing 11 via bonding roll 54.

FIGS. 12 and 13 are hysteresis loss curves recorded for 2 laminates prepared by using the laminator of FIG. 10. The hysteresis loss curve of FIG. 11 was recorded for a laminate comprising five full parallel incisions arranged in a configuration similar to that of FIG. 3. This is useful for preparing a closure tape 10 according to the invention. The hysteresis loss curve of FIG. 12 was recorded for a laminate comprising five parallel lines of partial slits arranged in a configuration similar to that of FIG. 9. The closure tape 10 which is obtainable from this laminate is not an embodiment of the present invention.

The invention will be further explained by the below examples. Numerical values of extensions, widths or lengths given above and below, refer to the relaxed state of the respective material, laminate or closure tape if not indicated otherwise. Before describing the examples a test method is described which is used to characterize the laminate and closure tape 10 of the present invention.

Test Method

Hysteresis Loss Measurement

A laminate which was prepared using the laminator of FIG. 10 and which had an extension in cross direction of 50 mm and in machine direction of 25 mm, was stretched in cross direction using a standard tensile test configuration as described in ASTM D 882 to an elongation of 130% with the extension in cross direction in the virgin state being defined as 100%. The laminate was then relaxed and a second stretching/relaxing cycle was subsequently run. The tensile tester speed was 254 mm/min and the initial tensile force was 0.2 N. The tensile force was measured as a function of the elongation during the virgin and the second test cycle.

EXAMPLES

Example 1

A laminate was obtained using the laminator of FIG. 11. A synthetic rubber elastic film 13 (sheath/core bicomponent fibers; core: 60% Vector 4211 from Exxon, 40% propylene 7060S from Fina; sheath: 100% propylene 7060S from Fina; sheath/core ratio=1:12, thickness 100 μ m, 25 mm wide) was unwound from supply roll 53 and laminated to a pressure-sensitive adhesive tape comprising a propylene backing with a thickness of 110 μ m bearing a SIS based pressure-sensitive adhesive which was unwound from storage roll 50 (roll width 50 mm). The adhesive tape is commercially available as Diaper Fastening Tape KE-700 from 3M Company, St. Paul, U.S.A. Prior to lamination in bonding roll 54 the pressure-sensitive adhesive tape was slit in rotary cutting wheel 52. The rotary cutting wheel was manufactured by Dienes Werke, Overath-Vilkerath, Germany and comprised 5 circular knives of the type Controlleur (D1=76,96 mm, D2=19 mm, thickness 2 mm, material 1.2067). The resulting

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laminate exhibited 5 full parallel slits in the area 12b of the elastic sheet 13, the slits having an extension in cross direction of approximately 25 μ m and being regularly spaced from each other by 2 mm. The configuration of slits correspond to that shown in FIGS. 3 and 3a. The laminate was obtained by unwinding it from storage roll 59 and cutting it in cross direction, thus obtaining laminates 50 mm in cross direction and 25 mm in machine direction.

The laminate was subjected to a hysteresis loss measurement described above, using the test parameters specified above. The hysteresis loss curve recorded is shown in FIG. 12.

Comparative Example 1

A laminate was prepared using the method of Example 1 using partial slits being arranged in 5 equally spaced lines. The configuration of slits corresponds to that shown in FIGS. 9 and 9a. The lines were regularly spaced from each other by 2 mm, and each line had 2 or 3 partial slits with a length of approximately 5 mm. The extension of the slits in cross direction was approximately 25 μ m prior to stretching.

The closure tape was subjected to a hysteresis loss measurement described above using the test parameters specified above. The hysteresis loss curve recorded is shown in FIG. 3.

LIST OF REFERENCES

- 1—disposable diaper
 - 2—inside surface
 - 3—outside surface
 - 4—absorbent core
 - 5—target area
 - 6—edge portion
 - 10—closure tape
 - 11—backing
 - 12—adhesive layer
 - 13—elastic sheet
 - 14—incisions (also termed as slits)
 - 15—fastening means
 - 16—finger-lift
 - 17—end portion of the closure tape to be attached to the outside surface 3 of the disposable diaper 1 (manufacturer's end)
 - 18—adhesive layer
 - 19—release sheeting
 - 20—support sheet
 - 21—user's end
 - 22—distance between the manufacturer's end 17 and the incision 14 closest to the manufacturer's end
 - 50—supply roll for the backing bearing the adhesive layer
 - 51, 55–58—roller
 - 52—rotary cutting wheel
 - 53—supply roll for elastic sheet
 - 54—bonding roll
 - 59—storage roll for laminate
- What is claimed is:

1. Closure tape (10) for an absorbent article, particularly for a disposable diaper (1), for fastening of the article on the body of a person, the closure tape being attachable to the outside surface (3) of the diaper (1) through one of its end portions (17) and comprising a backing (11) having a first

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side and a second side, where the first side is provided with a continuous or discontinuous adhesive layer (12), a fastening means (15) and a stretchable elastic sheet (13) attached to the adhesive layer, the backing (11) being essentially non-elastic and/or essentially non-extensible, the support sheet (20) comprising the backing (11) and the continuous or discontinuous adhesive layer (12) exhibiting one or more incisions (14) in the area of the elastic sheet with at least one of the incisions extending in machine direction over the full width of the backing (11) and the end portion (17) being separated from the incision (14) closest to the end portion (17), by a sufficiently large distance (22) to prevent the incisions (14) essentially from opening when attaching the end portion (17) to the outside surface (3) of the diaper (1) and bending the remaining part of the closure tape (10) to contact the inside surface (2) of the diaper (1).

2. Closure tape according to claim 1 wherein the elastic sheet (13) is selected from a group of materials consisting of elastomeric polyurethanes, natural or synthetic rubbers, elastomeric polyamides or elastomeric polyesters and elastomeric polyolefins.

3. Closure tape according to claim 1 wherein the fastening means (15) comprises a mechanical fastening means and/or pressure-sensitive adhesive layer.

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4. Closure tape according to claim 1 wherein the backing (11) is selected from a group consisting of kraft paper, cellophane film, polymeric films, non-wovens, foamed materials and laminates.

5. Closure tape according to claim 1 wherein the incisions (14) have an average width in cross direction in the relaxed state of less than 100 μm .

6. Closure tape according to claim 1 wherein the number and extension of the incisions (14) in MD (length) is chosen as to allow for an elongation of at least 15% when applying a force of 20 N in CD.

7. Closure tape according to claim 1 wherein the distance (22) between the end portion (17) and the incision (14) closest to the end portion 17, is at least 2 mm.

8. Closure tape according to claim 1 additionally comprising a release sheeting (19) bearing an adhesive layer (18) to allow for securing the closure tape to the diaper (1) in a shear mode type of attachment.

9. Prefabricated closure tape in a stable roll from which the closure tape for an absorbent article according to claim 1 can be cut.

10. Absorbent article comprising a closure tape according to claim 1.

* * * * *

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US005839977A

United States Patent [19]

Maurer et al.

[11] Patent Number: 5,839,977

[45] Date of Patent: Nov. 24, 1998

[54] APPLIQUE FOR A HOCKEY STICK

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Attorney, Agent, or Firm—Bose McKinney & Evans

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[22] Filed: Jun. 26, 1995

[51] Int. Cl.⁶ A63B 67/00

[52] U.S. Cl. 473/446; 473/471; 473/560

[58] Field of Search 473/563, 249,
473/250, 351, 352, 324, 329, 330, 331,
342, 334, 132, 189, 195, 190, 431, 361,
363, 471, 514; 235, 416; 273/348.4, 348.5,
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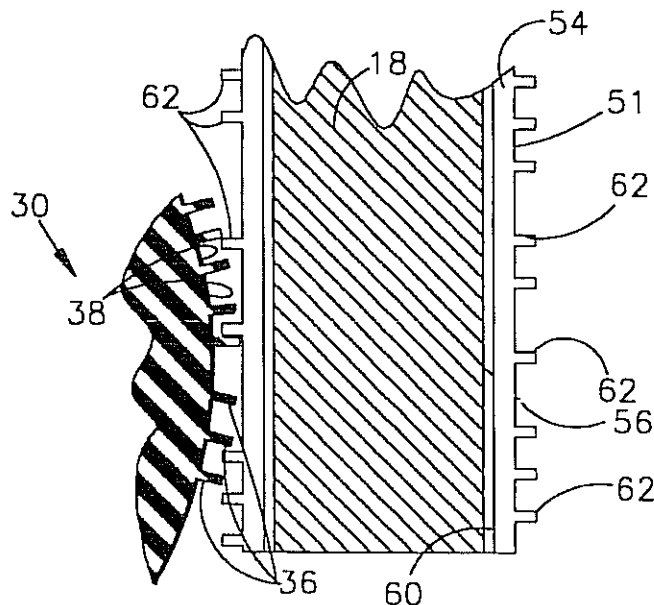
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[57] ABSTRACT

An applique is disclosed for placement on a hockey stick for improving the engagement of the stick with a game piece. The applique includes a base member having a first surface and a second surface. An adhesive is provided on a second surface for adhesively attaching the second surface to the stick. An ordered array of substantially non-deforming protrusions or recesses are formed on the first surface for engaging a surface of a game piece, such as a hockey puck. The protrusions are designed to maximize the frictional engagement between the applique and the puck, to increase the user's ability to control the puck. In an alternate embodiment, an applique is disclosed having a series of direction influencing protrusions formed on the first surface for influencing the direction of deflection of the hockey puck off the first surface toward a predetermined direction. Protrusions are disclosed for use on a goalie's hockey stick to drive the puck downwardly toward the ice or street to aid the goalie in controlling the puck. Alternate protrusion types are also provided for use on a forward's stick, to influence the direction of deflection of a puck on the stick in a lift or spin when the puck is being handled or shot by the forward. In an alternate embodiment, an improved grip applique is provided, which is attachable to the handle of the stick to increase the user's ability to achieve consistent placement of his hand on the stick.

15 Claims, 7 Drawing Sheets

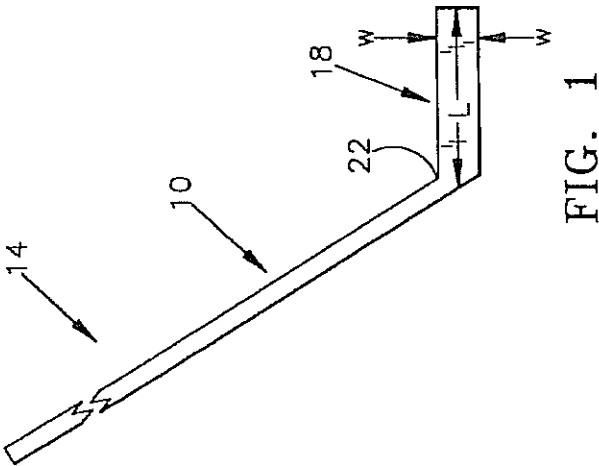
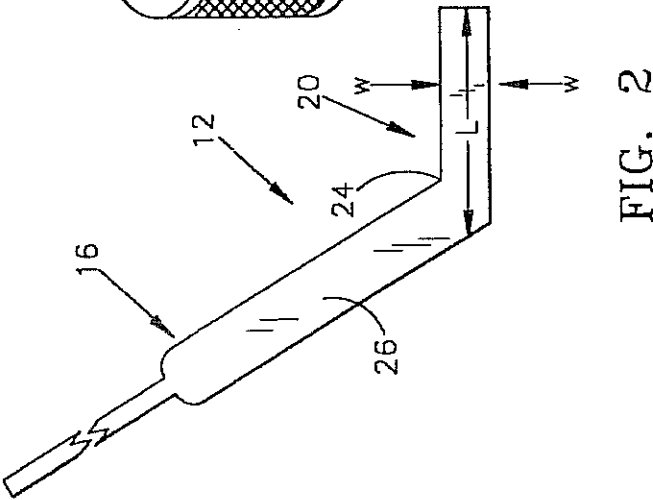
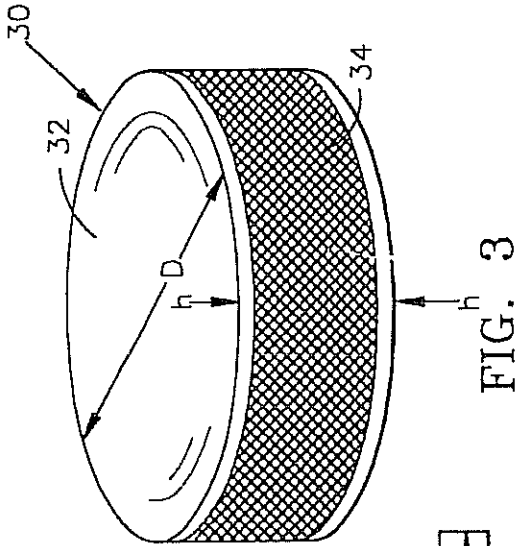


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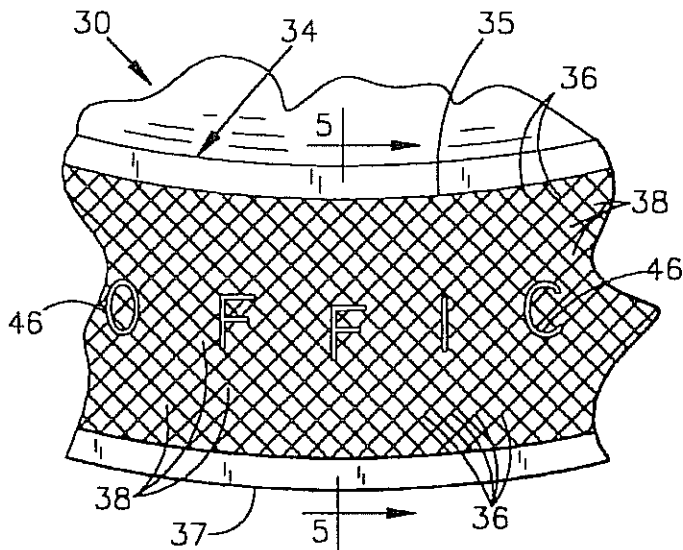


FIG. 4

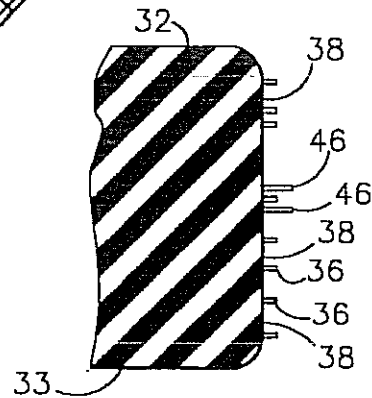


FIG. 5

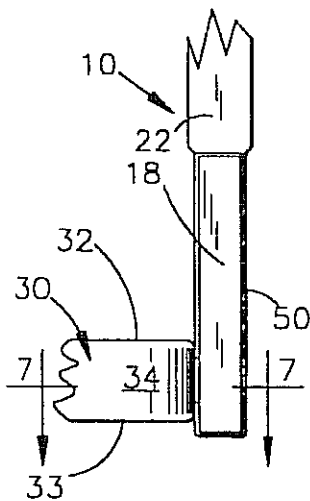


FIG. 6

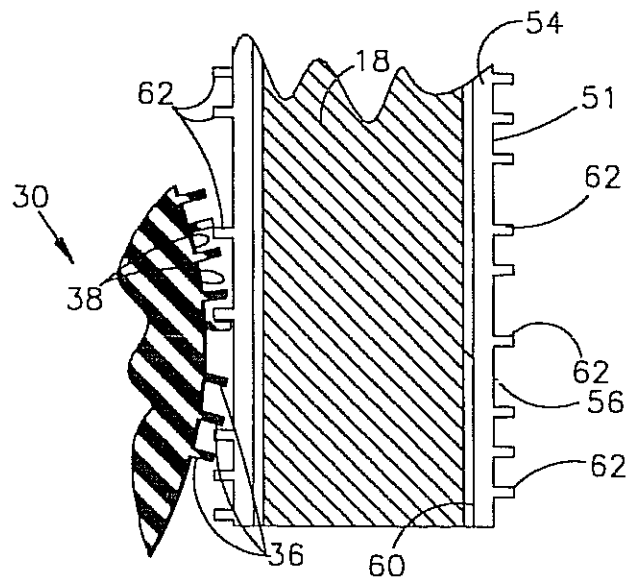


FIG. 7

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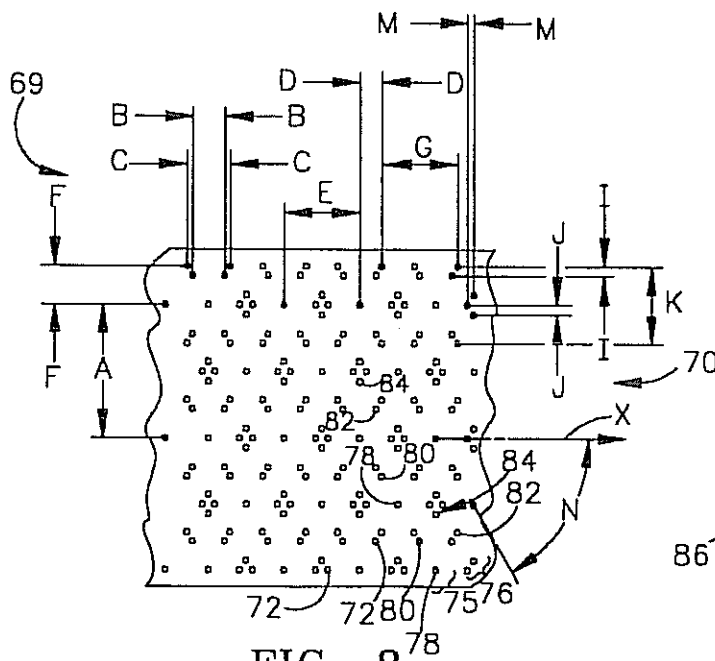


FIG. 8

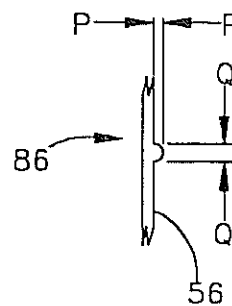


FIG. 9

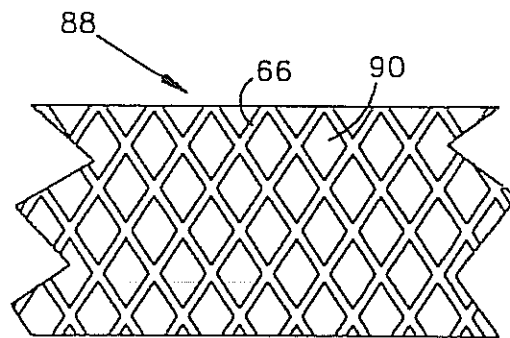


FIG. 10

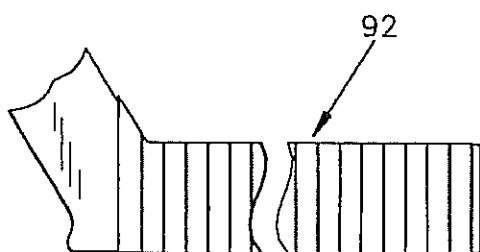
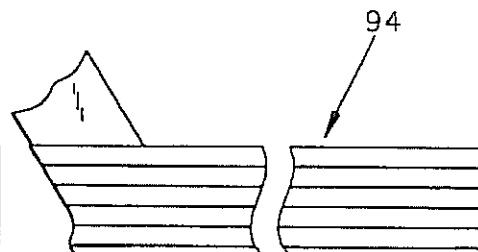


FIG. 11

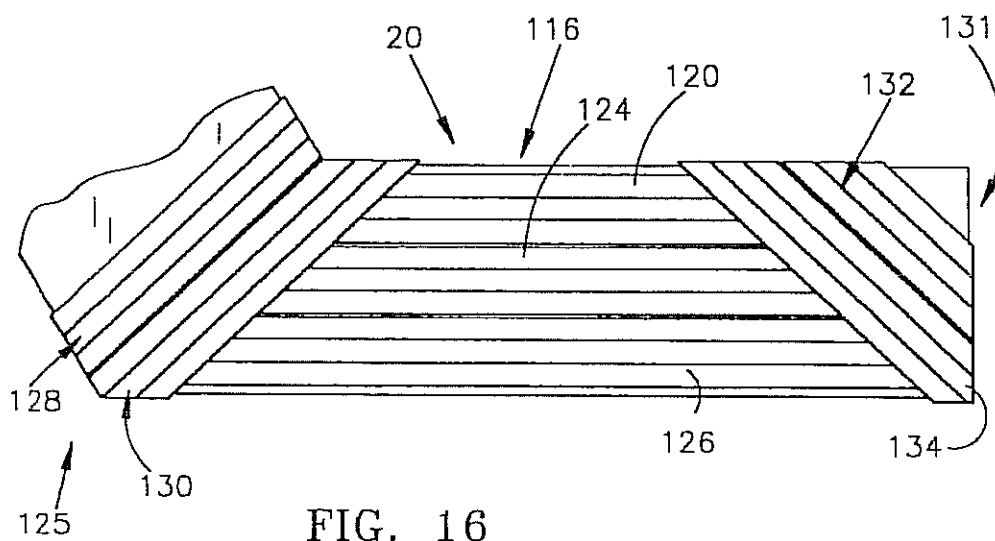
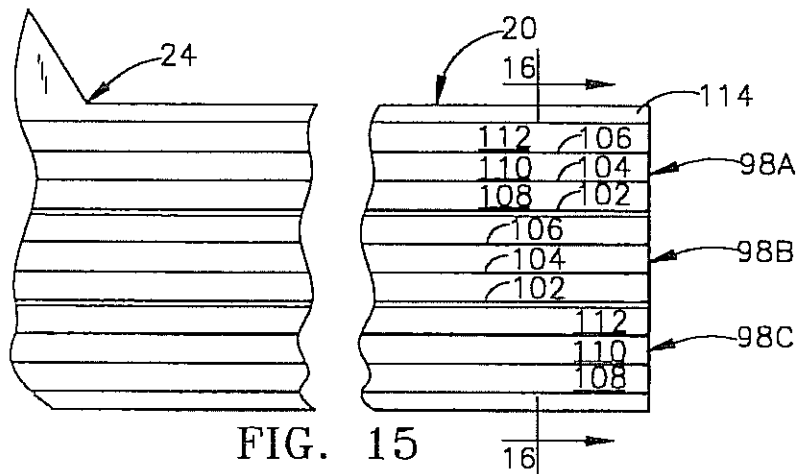
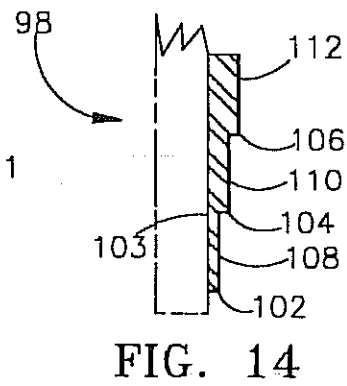
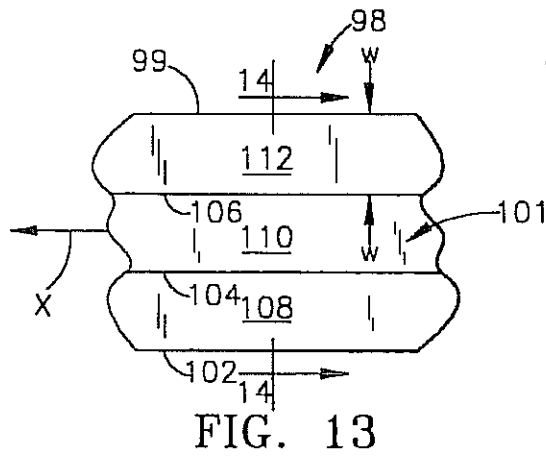


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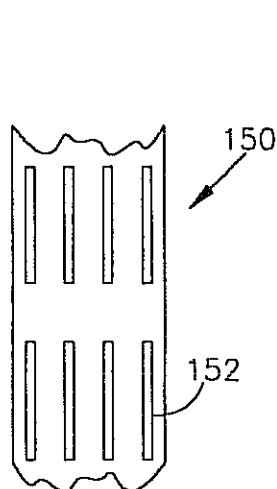


FIG. 17

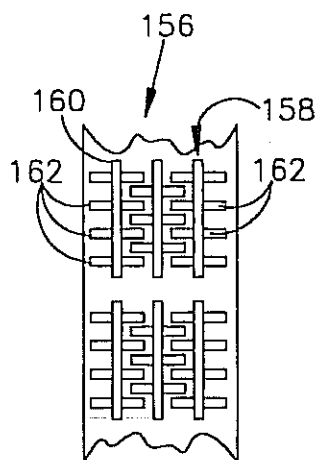


FIG. 18

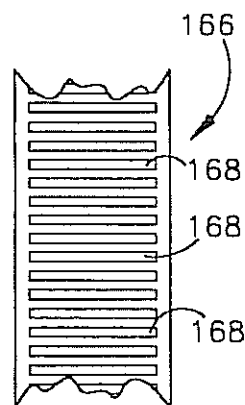


FIG. 19

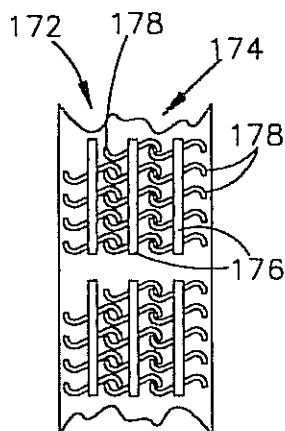


FIG. 20

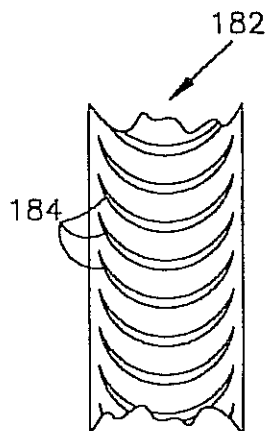


FIG. 21

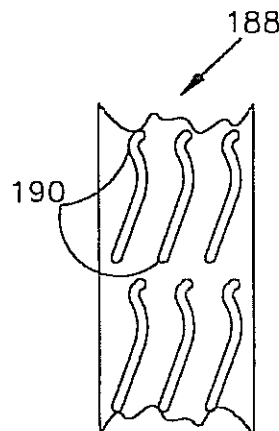


FIG. 22

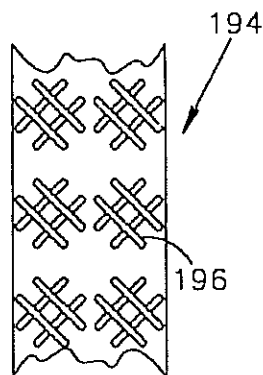


FIG. 23

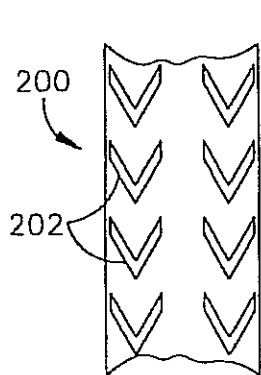


FIG. 24

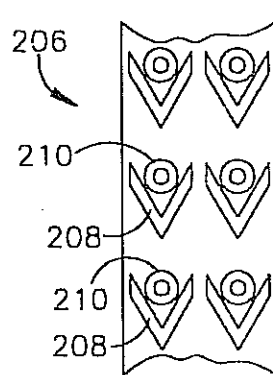


FIG. 25

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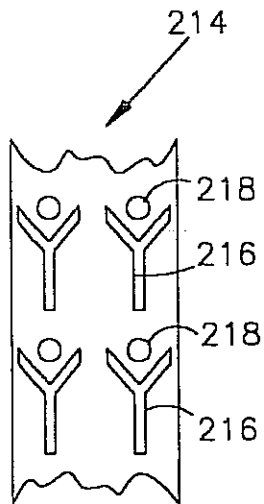


FIG. 26

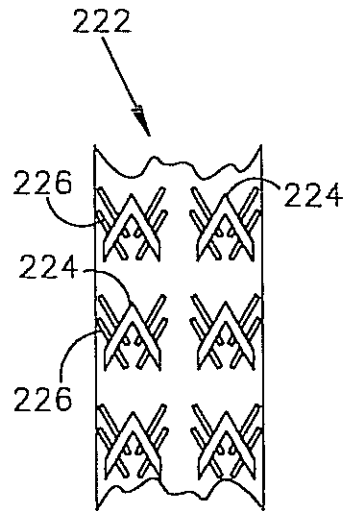


FIG. 27

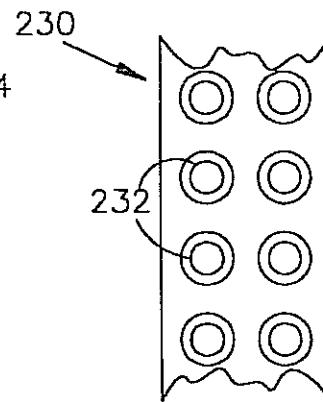


FIG. 28

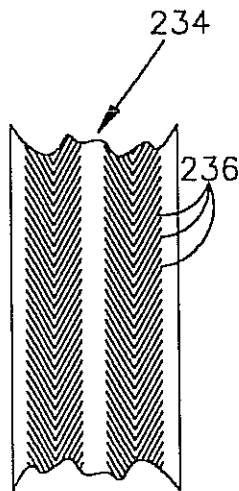


FIG. 29

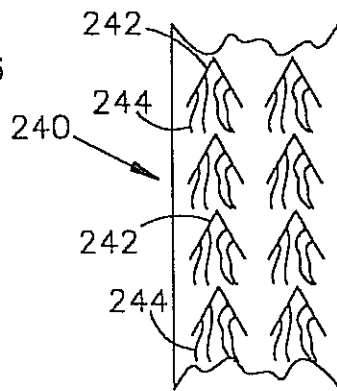


FIG. 30

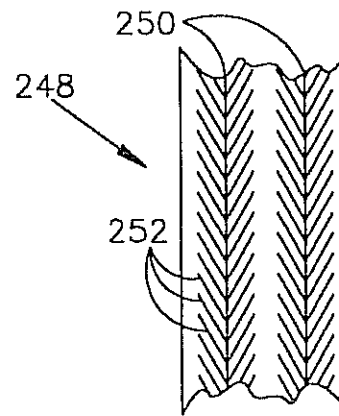


FIG. 31

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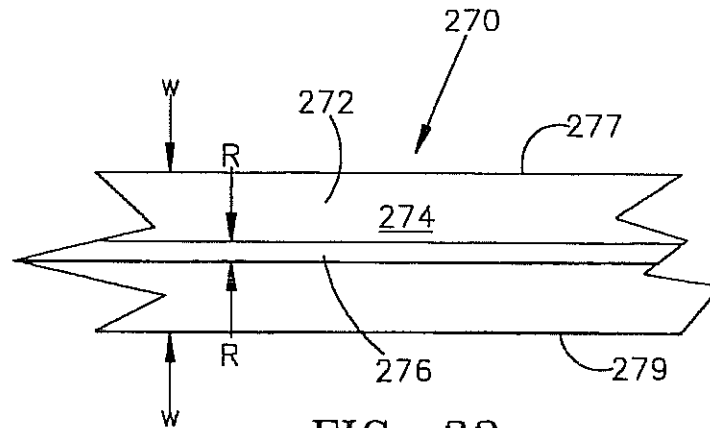


FIG. 32

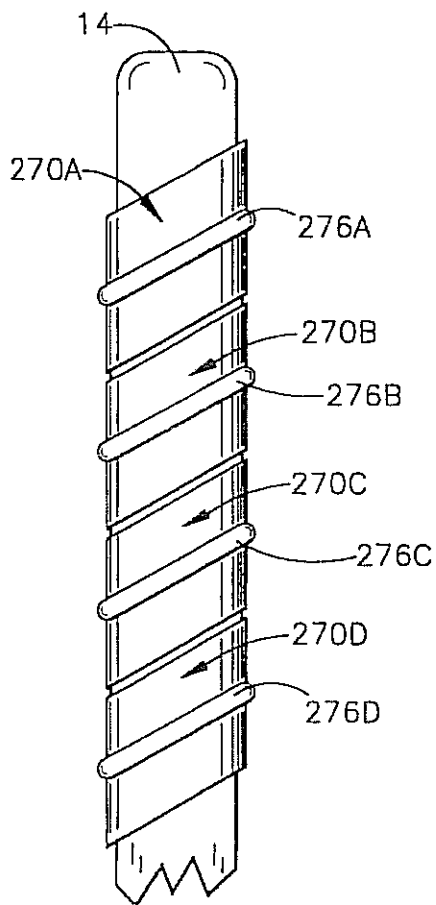


FIG. 33

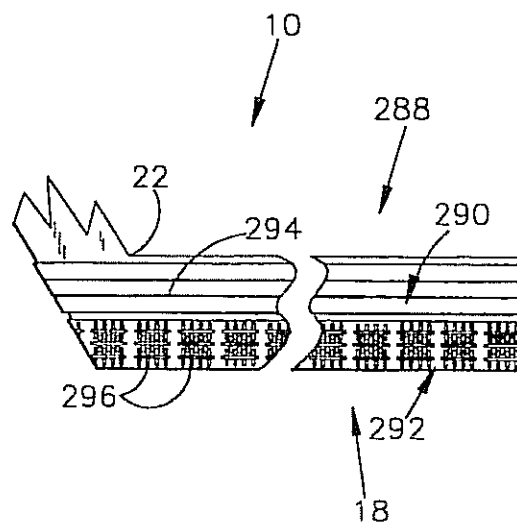


FIG. 34

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APPLIQUE FOR A HOCKEY STICK

I. TECHNICAL FIELD OF THE INVENTION

The present invention relates to sport equipment, and more particularly to an applique for use on a hockey stick for enhancing the user's ability to control a game piece, such as a hockey puck or hockey ball, with the hockey stick and to improve the user's ability to grip the hockey stick.

II. BACKGROUND OF THE INVENTION

For years, hockey type sports have been enjoyed and played by people throughout the world. Although ice hockey is the best known form of hockey played currently in the United States, other types of hockey exist, such as field hockey, and "street" or "in-line hockey" which is played using in-line roller skates or traditional roller skates, rather than blade bearing skates.

Although many variations in the sport exist, the common denominator which unites the potential users of the present invention is the "hockey stick". As used in this application, "hockey stick" refers to any stick or bat-like object that includes a handle portion that is gripped by the user at one end, and has a ground-engageable blade disposed at the other end.

Examples of known hockey sticks are shown in FIGS. 1 and 2. Stick 10 of FIG. 1 is a type of stick typically used by wings, centers and defensemen on a ice hockey team. Because wings, centers and defensemen use the same type of stick and use their sticks to perform generally similar functions, wings, centers and defensemen will be referred to collectively in this application as "forwards," and the hockey stick type typically used by them as "forward's sticks" 10. FIG. 2 shows a goalie's stick 12 which is used by a goalie on a hockey team. Each of the forward's hockey stick 10 and the goalie's hockey stick 12 includes a handle portion 14, 16, a ground-engaging blade 18, 20 and a "heel" or "shank" portion 22, 24, respectively. The shank portion 22, 24 is the area of the hockey stick where the respective handles 14, 16 join to the respective blades 18, 20.

The forward's hockey stick 10 and the goalie's stick 12 are generally similar. However, it will be noted that the length L and the width W of the blade of the goalie's hockey stick 12 are typically larger than that of the forward's stick.

For quite some time, it has been common practice to wrap a multi-purpose cloth tape around the blade of a hockey stick and the handle of the hockey stick. The multi-purpose cloth tape typically used is virtually identical to the tape used by some baseball players to wrap their bats and by some cyclists to wrap their handlebars. Originally, the primary purpose of wrapping the blade was to reinforce the blade to help prevent it from breaking when it struck a puck or the ice to thereby lengthen the useful life of the blade.

Several patents are known which disclose devices that seek to improve on the reinforcing qualities of tape by using alternative methods to strengthen the blade.

Diederich U.S. Pat. No. 4,172,594 discloses a hockey stick having a wooden blade, whose surface is reinforced with a fiberglass impregnated resin coating. Tape can then be placed over this coating.

Profit U.S. Pat. No. 4,651,990 relates to a hard plastic channel member that fits over the blade of a goalie's hockey stick to provide reinforcement for the blade. The channel member is overlain with tape to provide a control surface.

Franck U.S. Pat. No. 4,448,721 relates to a hockey stick made by an injection molding technique. The blade may

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include series of apertures that reduce the weight of the core. A pre-preg material (such as a kevlar/epoxy material) is molded around the core to provide additional strength to the blade.

Goupil, et al. U.S. Pat. No. 4,084,818 discloses a hockey stick having a blade that is overlain with fiberglass yarn, which is wrapped around the blade. The fiberglass yarn is then dipped into an epoxy bath. The epoxy bath dipped blade is then left to dry and harden for 24 hours.

Traverse U.S. Pat. No. 3,353,826 discloses the use of a tubular sock which is knitted of a strong yarn of nylon or fiberglass, together with very fine nylon filaments. The sock is sized to fit smoothly on the blade, and onto a few inches of the shank of the stick, when tightly stretched. Liquid plastic is then applied to the portion of the stick covered by the sock so as to imbue the sock and form a top coating thereon.

Many advances, such as those described above have found their way into currently manufactured hockey sticks. Most currently manufactured hockey stick blades include some sort of plastic, fiberglass or KEVLAR® coating to help strengthen the blade to prevent it from breaking. Alternatively, other sticks are designed with tubular aluminum handles having an open end into which the shank of a blade can be fitted, so that a broken blade can be removed from the handle, and a new blade inserted into the handle, so that the handle may be reused indefinitely.

In view of these advances, broken blades have become much less of a problem, and hence the need for tape to reinforce the blade to provide additional mechanical strength is greatly reduced. Most currently manufactured blades appear to have sufficient mechanical strength so as to make blade breaks a rarity.

The second function performed by the multi-purpose tape is to aid the user in puck control. As the wooden or fiberglass surface of a hockey blade typically has a lower coefficient of friction than the surface of adhesive cloth multi-purpose tape, the placement of tape on the blade of the stick tends to increase the coefficient of friction of the blade, which provides the blade with a "grippier" surface than an unwrapped blade. This "grippier" surface helps the hockey player to better maintain the puck on the stick when the player is catching the puck, advancing the puck, shooting the puck, or passing the puck.

Several known items of prior art exist that address this need for providing the blade of a hockey stick with an improved control surface.

Spratt Canadian Patent No. 984,420 discloses a hockey stick having a blade to which an adhesive is applied. While the adhesive is still wet, a grit material (e.g., sand) is then applied to the adhesive to provide a gritty surface to the stick.

Coles U.S. Pat. No. 3,458,194 discloses the use of a tape material having an adhesive side for attaching to a stick, and an outer surface comprised of a Velcro-like material. The purpose of this Velcro-like material is to improve the control of the puck on the blade.

Susi, et al. U.S. Pat. No. 5,332,212 relates to the use of a rubbery (soft plastic) coating for a hockey blade that is applied to the blade through an immersion or aerosol spray technique.

Gardner, et al. U.S. Pat. No. 2,912,245 discloses a hockey stick having a rubber coating molded onto the blade to simulate a tape surface. The rubber coating is applied by a molding process, wherein a strip of uncured rubber is laid on

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face of the mold. The blade is then laid upon the strip of uncured rubber. A second strip of uncured rubber is laid upon the blade. The mold is then closed with both faces of the mold being provided with ridges for molding ridges into the first and second strips of uncured rubber. The blade and the sides of the two strips of uncured rubber may be provided with an adhesive. After the mold is closed, it is subjected to a 300° F. temperature and between 3 and 5 tons of pressure for a duration of between about 3 and 3.5 minutes. The rubber strip is cured during this molding process.

Although the above discussed, Sprat, Coles, Susi, and Gardner references do address the issue of providing a surface on a hockey blade which seeks to improve over known cloth adhesive type multi-purpose tape, room for improvement still exists. In particular, the need still exists for providing a surface for a hockey stick that provides a user with a greater degree of control than that disclosed in any of the references described above. Additionally, there is a need for an improved control surface for a hockey stick blade that can be applied to the blade by the user in a manner that is familiar to the user and is similar to the manner in which the user currently applies tape to the blade.

It is therefore one object of the present invention to provide an applique which creates an improved control surface on a hockey stick blade, and which can be applied to the hockey stick blade by the user, in a manner similar to the manner in which adhesive tape is currently applied to hockey blades and without the need for adhesive sprays, grit applicators, curing molds, or other non-user friendly application techniques.

Another deficiency of the devices discussed above, and conventional hockey tape is that they provide a generally "neutral" stick surface, which does not tend to influence the angle at which a puck deflects off of the surface of the stick. Although a neutral deflection is preferred in many situations, a need also exists for a surface that will tend to influence the angle of deflection of the puck to thereby impart better directional predictability.

Therefore, it is also an object of one embodiment of the present invention to provide a surface for a hockey stick blade that helps to influence a puck striking the surface to deflect from the surface in a predetermined direction.

A further deficiency with current known hockey sticks is that few provide a completely suitable gripping surface on the handle of the stick. In order to provide a better gripping surface for the user, most hockey players currently wrap the end of the handle of the stick with a multi-purpose cloth adhesive tape, which is usually the same tape used by the player to wrap the blade of the stick. In a manner similar to the manner in which it functions with the blade, the application of a multi-purpose adhesive tape to the end of the handle increases the co-efficient of friction of the wrapped portion of the handle, which thereby helps the user's gloved hand to hold onto the stick better. Those familiar with the large, somewhat cumbersome protective gloves worn by hockey players will appreciate the difficulty that a player often has holding onto a stick with his gloved hand.

Although the application of a multi-purpose tape to the handle does provide a benefit to the player, as it helps the user to increase the frictional engagement between his glove and the handle of the stick, room for improvement exists. In particular, room for improvement exists in providing a grip that not only provides the user with a relatively high degree of frictional engagement between his hand and the handle of the hockey stick, but also helps to position his fingers

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consistently on the stick. It is therefore another object of the present invention to provide an applique for use on the handle of a hockey stick which both improves the user's ability to grip and retain the stick, and also improves the user's ability to obtain a consistent placement of his hand on the handle of the stick.

III. SUMMARY OF THE INVENTION

In accordance with the present invention, an applique is provided for placement on a hockey stick for improving the engagement of the stick with a game piece. The applique comprises a base member having a first surface and a second surface, and means for adhesively attaching the second surface to the stick. An ordered array of substantially non-deforming protrusions are formed to extend above the first surface for engaging the surface of a game piece.

Preferably, the protrusions are generally hemispherical in shape, and are sized for engaging recesses formed in the surface of the game piece, such as the diamond shape recesses typically found along the side surface of a hockey puck. The hemispherical protrusions are sized and positioned to maximize the probability of the insertion of the protrusions of the applique into the recesses of the puck, to maximize engagement of the puck and stick and thereby provide an enhanced coefficient of friction therebetween.

In an alternate embodiment of the present invention, the ordered array of protrusions are replaced with an ordered array of recesses formed in the base member, to extend below the first surface for engaging protrusions on the side surfaces of the puck.

In another alternate embodiment, an applique is provided for placement on a hockey stick for improving the engagement of the stick with a game piece. The applique comprises a base member having a first surface and a second surface and means for adhesively attaching the second surface to the stick. Direction influencing means are disclosed on the first surface for influencing the direction of deflection of the game piece off the first surface, toward a predetermined direction.

In still yet another alternate embodiment, an applique is provided for placement on a hockey stick for improving the user's grip of the stick. The applique comprises a base member having a first surface and a second surface, and a means for adhesively attaching the second surface to the stick. A longitudinal ridge member is formed to extend above the first surface. Preferably, the size and position of the ridge member are chosen so that when the applique is wrapped around the stick in a side-by-side relation, the ridge members of adjacent portions of the applique provide sufficient room to receive a user's finger therebetween.

One feature of the present invention is that it contains an ordered array of substantially non-deforming protrusions, that are formed to extend above the outer surface of the applique for engaging a surface of a game piece. Preferably, the protrusions are sized and positioned to maximize the engagement of the protrusions with recesses formed in the surface of a game piece, such as a hockey puck. This feature has the advantage of increasing the degree of frictional engagement between the stick blade and the game piece. This increased frictional engagement helps the player to better maintain the puck on the stick, thereby giving to the player an enhanced ability to control the puck on the stick. Additionally, this enhanced frictional engagement can increase the ability of the user to spin or lift the puck when shooting the puck.

Another feature of a preferred embodiment of the present invention is that an applique is provided having direction

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influencing means disposed on the surface for influencing the direction of deflection of the game piece off the stick toward a predetermined direction. This feature has the advantage of enabling the user to better direct the puck in an intended or desired direction and to reduce the likelihood that the puck will travel in an unintended or undesired direction.

The issue of what constitutes a "desired direction" will likely vary among types of players (e.g., goalies and forwards) and may also vary from player to player based on individual preferences and circumstances. However, several common preferred directions exist. For goalies, it is desirable to influence a puck to deflect downwardly off a stick blade toward the ice. By directing the puck downwardly, it will engage the ice, and preferably stop only a short distance in front of the goalie, so that the goalie can retrieve it.

It is usually undesirable for a goalie to deflect the puck upwardly. An upwardly deflected puck is more difficult for the goalie to control, and hence, stands a greater likelihood of being controlled by an opposing player. Additionally, a puck which is deflected upwardly may continue in its same direction of travel, and thereby cause the goads to) lose control of the puck. As such, the applicants have found that, for goalies, it is preferable to influence the puck to deflect in a downward direction, and undesirable to deflect the puck in an upward direction.

Preferably, the direction influencing means also increases the applique's ability to absorb energy from the puck, thus reducing its deflection energy off of the stick, and hence reducing the distance that the puck will travel off the blade after striking it.

Different considerations exist with respect to the direction in which a forward, such as a wing, center, or defenseman, may wish to deflect a puck. As a forward is often using his stick to advance the puck toward the opponent's goal, he may wish to use a control surface that will cause the puck to behave in a manner that makes it difficult for an opponent, such as the opponent's goalie, to stop it. As a general rule, most goalies find it more difficult to stop an airborne puck than one which is traveling along the surface of the ice. Additionally, it is often desirable to lift the puck off the ice as a lifted puck that is traveling through the air tends to maintain its speed better, and is less likely than one traveling along the ice to slow down through frictional engagement with the ice. As such, a forward may wish to have a control surface on his stick that influences the puck to deflect upwardly when shot, and thereby lift off the ice.

Additionally, many players might prefer to have a control surface which influences the puck to "spin" when hit, as a spinning puck tends to travel more accurately than a non-spinning puck, thus increasing the likelihood that the player shooting a spinning puck will score when the puck is shot on goal.

As a third alternative, some players may desire that the control surface influence the puck to bounce downwardly toward the ice, as this type of deflection would help to enable the player to maintain a better control of the puck as he advances it down the ice or attempts to pass it to one of his teammates.

It is a further feature of the present invention that the direction influencing means can include two or more series of direction influencing means for providing two or more zones on the stick, with each zone having a pattern thereon to influence the puck in a different direction. This feature has the advantage of enhancing the player's ability to control the puck by enabling the stick to improve several facets of the

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player's control of the puck. For example, a player may wish to have a first zone near the top of the blade that influences the puck to deflect downwardly toward the ice. This downward deflection would help the player to control the puck when he was receiving airborne passes from his teammates or otherwise trying to gain control of an airborne puck when taking it away from an opponent. However, he may also wish to have a direction-influencing pattern on the bottom portion of his stick that would cause the puck to lift and spin when he was shooting the puck. In such case, the user may prefer a direction-influencing applique having a pair of zones, each of which is intended to influence the puck to travel in a different direction.

It is also a feature of one embodiment of the present invention that an applique is provided for placement on a hockey stick handle for improving the user's grip on the handle of the stick. This feature has the advantage of giving the user a more secure grip, which helps to prevent the user's hand from sliding up and down the length of the stick during use. Additionally, the grip helps to position the player's hand more consistently, to enable the player to grip the stick in a more consistent position, thus aiding the player in his stick control and ability to control the game piece with the stick.

Additionally, it is a further feature of the present invention that the applique is preferably made from a relative "soft durometer" polyvinyl chloride (PVC) material. The use of this PVC material has the advantage of making the applique water repellent, and helps to make the blade "softer," thus giving the player better "feel" and better control over the puck.

These and other features of the present invention will become apparent to those skilled in the art upon review of the drawings and detailed description set forth below of that which is perceived presently to be the best mode of practicing the invention.

IV. BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a side plan view of a forward's hockey stick;

FIG. 2 is a side plan view of a goalie's hockey stick;

FIG. 3 is a perspective view of a hockey puck;

FIG. 4 is an expanded view of a portion of a side surface of a hockey puck;

FIG. 5 is a sectional view taken along lines 5—5 of FIG. 4;

FIG. 6 is an end view of a hockey stick and blade, and side view of a puck in engagement therewith;

FIG. 7 is a sectional view taken generally along lines 7—7 of FIG. 6;

FIG. 8 is a greatly enlarged, largely schematic view of a protrusion pattern of the present invention;

FIG. 9 is an even further enlarged side view of a single protrusion of the pattern shown in FIG. 8;

FIG. 10 is a top view of a segment of an alternate embodiment applique of the present invention;

FIG. 11 is a side view of a hockey stick showing a "top to bottom" wrapping pattern;

FIG. 12 is a side view of a hockey stick showing an alternate, side-to-side wrapping pattern;

FIG. 13 is a top view of an alternate embodiment applique of the present invention;

FIG. 14 is a sectional view taken generally along lines 14—14 of FIG. 13;

FIG. 15 is a side view of a hockey stick blade showing the applique of FIG. 13 thereon;

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FIG. 16 is a side view of a hockey stick blade containing the applique of FIG. 13 showing an alternate wrapping pattern;

FIG. 17 is a top view of a segment of an alternate embodiment applique;

FIG. 18 is a top view of a segment of an alternate embodiment applique;

FIG. 19 is a top view of a segment of an alternate embodiment applique;

FIG. 20 is a top view of a segment of an alternate embodiment applique;

FIG. 21 is a top view of a segment of an alternate embodiment applique;

FIG. 22 is a top view of a segment of an alternate embodiment applique;

FIG. 23 is a top view of a segment of an alternate embodiment applique;

FIG. 24 is a top view of a segment of an alternate embodiment applique;

FIG. 25 is a top view of a segment of an alternate embodiment applique;

FIG. 26 is a top view of a segment of an alternate embodiment applique;

FIG. 27 is a top view of a segment of an alternate embodiment applique;

FIG. 28 is a top view of a segment of an alternate embodiment applique;

FIG. 29 is a top view of a segment of an alternate embodiment applique;

FIG. 30 is a top view of a segment of an alternate embodiment applique;

FIG. 31 is a top view of a segment of an alternate embodiment applique;

FIG. 32 is a top view of a segment of an grip-enhancing applique of the present invention;

FIG. 33 is a front view of a handle of a hockey stick showing the applique of FIG. 32 wrapped there around; and

FIG. 34 is a side view of an alternate embodiment wrapping pattern, for creating an applique having two distinct zones for influencing the direction of deflection of a puck.

V. DETAILED DESCRIPTION

Turning now to FIGS. 1-3, hockey sticks 10, 12 and a hockey puck 30 are shown which are integral to the understanding of the applique of the invention.

FIG. 1 shows a forward's hockey stick 10 of the type normally used by a defenseman, wing, or center. The forward's hockey stick has a handle portion 14 and a blade portion 18. According to current ice hockey equipment rules, the blade 18 of the forward's hockey stick 10 can have a width W — W of between 2 and 3 inches, and a length L — L of less than 12.5 inches. A forward's hockey stick also includes a shank (heel) portion 22 which comprises that area wherein the blade 18 meets the handle 14.

The goalie's hockey stick 12 includes a handle 16, a blade 20 and a shank portion 24. According to current ice hockey equipment rules, the goalie's stick 12 can have a blade 20 having a maximum width W of less than 3.5 inches, and a length L of less than 15.5 inches. The widened lower portion 26 of the handle 16 is used by the goalie to help block pucks.

For in-line skate ("street") hockey events, forward's sticks and goalie's sticks similar to those shown in FIG. 1

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and 2 are used. For events sanctioned by one sanctioning body (USA HOCKEY IN-LINE), the dimensions used for street hockey sticks are identical to those for ice hockey sticks. However, for events sanctioned by another sanctioning body (THE NATIONAL IN-LINE HOCKEY ASSOCIATION (NIHA)), different dimensions are specified. For NIHA events, the forward's stick may have a blade having a length of less than 12 inches, and a width of between 1.75 and 3.25 inches. A goalie's street hockey stick may have a blade having a length of less than 15.5 inches and a width of less than 3.5 inches. Additionally, some models of forward's in-line hockey sticks also include a horizontally extending array of holes disposed across the upper portion of the blade of the stick.

Although the applique of the present invention can be applied to a hockey stick (e.g., 10, 12) and used with any game piece, such as a ball of some sort, the most common game piece is a puck, such as hockey puck 30. Hockey puck 30 is a disk-shaped solid, vulcanized rubber game piece having a circular top surface 32, a circular bottom surface 33 (FIG. 5) and a cylindrical sidewall 34. The diameter D of each of the circular top surface 32 and bottom surface 33 is preferably about 3 inches. The cylindrical sidewall has a height, H — H (FIG. 3) of approximately 1 inch.

As best shown in FIGS. 4 and 5, the cylindrical side surface 34 has a cross-hatched pattern of raised ridges 36 that define a series of diamond-shaped recesses 38 therebetween. A pair of circumferential ridges 35, 37 extend circumferentially around the side surface 34 of the puck 30, and are disposed at the border of patterned areas to define the boundary of the patterned area of side surface 34. Although almost all hockey pucks have this pattern of ridges 36 and diamond-shaped recesses 38, the sizes of the ridges 36 and recesses 38 vary from manufacturer to manufacturer. The applicant knows of at least three different sized patterns used currently. Known hockey pucks that are manufactured in Czechoslovakia have a ridge 36 and recess 38 pattern which contains 32 recesses 38 per inch in a height dimension (e.g., along lines H — H of FIG. 3), and 28 rows of recesses 38 per inch in a circumferential direction. Comparable pucks made in Canada and Slovakia, by contrast, contain 24 recesses per inch in a height dimension H — H , and 20 recesses per inch in a circumferential direction. Additionally, certain pucks known to the applicant that are made in China have a pattern containing 20 recesses per inch when measured in a height direction H — H , and 20 recesses per inch when measured in a circumferential direction.

These spacing differences create recesses in the different types of pucks, which have slightly different shapes and sizes. These differences in the shape and size of the recesses add to the challenge of designing an applique that will work well with all of the different types of pucks and their different cross-hatched pattern configurations.

As best shown in FIGS. 4 and 5, most hockey pucks 30 include secondary protrusions which are sized and shaped differently than the protrusions 36 formed by the cross-hatched pattern. These protrusions primarily comprise letters 46, such as the letters "O-F-F-I-C" shown in FIG. 4. These letters 46 have a different shape and position than the cross-hatched ridges 36. As best shown in FIG. 5, these secondary protrusions 46 also tend to have a greater height than the cross-hatched ridges 36, and thus stick out further from the side surface 34 of the puck 30.

As best shown in FIG. 6, the applique 50 is designed to be placed on the blade 18 of a hockey stick, to enhance the user's ability to control the puck 30 with the blade 18, by

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maximizing the frictional engagement between the blade 18 and the puck 30. As a result of this enhanced frictional engagement, the user is better able to spin, lift and control the puck 30.

The applique 50 can take on a variety of forms. Preferably, the applique 50 comprises a ribbon-like base member 54 having a first surface 56 and a second surface 60. The applique 50 of the present invention can be generally similar in size, shape and flexibility to currently used multi-purpose cloth tapes, and can be provided in a roll, similar to the rolls in which tape is currently provided. Preferably, the applique (in its roll-tape form) has a width of about 0.75 inches, and is formed into rolls having a length per roll of between about 4 and 20 yards in length. Because of the formed surface features (discussed below) of the applique 50, it will likely have a thickness which is slightly greater than conventional roll tapes. The applique 50 can be manufactured in a variety of colors.

Alternately, the applique 50 can be provided as a "patch" format that is manufactured on a sheet, and then is applied in one piece over the front, back (or both) faces of the hockey stick blade. The patch form of the applique 50 would be especially useful in conjunction with the "multi-zone" applique 288 shown in FIG. 34, and would also be useful to provide the application configuration 116 shown in FIG. 16.

As most current hockey blades include fiberglass reinforcement, the tape need not be wrapped around the blade to provide additional reinforcement, as this additional reinforcement is unnecessary. As such, the applique 50 of the present invention can be applied only to one face of the blade if so desired, such as by placing the applique 50 in its "patch" form on only one face. It is envisioned that forwards will still choose to place the applique 50 over both sides of their blade, as most forwards use both sides of the blade to control the puck 30. However, goalies typically only use one face of their blade, and as such, may choose not to place the applique 50 on the back side of the blade.

The second surface 60 of the applique includes an adhesive for adhesively attaching the base member 54 to the surface of the blade 18. The adhesive used can be similar or identical to the adhesive used currently with multi-purpose hockey tapes.

The first surfaces of most of the embodiments of the present invention include a plurality of substantially non-deforming protrusions that are formed on the first surface 56 of the applique. (The ridges 102, 104, 106 of the embodiment shown in FIGS. 13-15 may not quite constitute "protrusions.") Except for the embodiment shown in FIG. 10, the protrusions 62 are all formed to extend above the first surface 56 of the base member 54.

As will be discussed in more detail below, the protrusions 62 can assume a variety of forms and shapes, many of which are discussed in connection with various embodiments shown in the drawings. However, several common features unite all of the embodiments. First, the protrusions 62 are disposed on the first surface of the base member 54 of the applique 51 in an ordered array. The array is ordered to maximize the frictional engagement between the protrusions 62 and, hence, the first surface 56 of the applique 50 with the side surface 34 of the puck 30. In the embodiments shown in FIGS. 7 and 8-9, the protrusions are arrayed to maximize the probability of the insertion of the protrusions 62 of the appliques 51, 69 into the recesses 38 of the puck 30. In the embodiments shown in FIG. 10, a series of depressions are used which are placed in an ordered array to maximize the probability of the protrusions 36 of the side surface 34 of the

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puck 30 being received into the cross-hatched recesses 66 formed on the applique 50. One feature of the protrusions and recesses is that the enhanced frictional engagement that they provide help the user to lift and spin the puck when the user shoots the puck.

A second common feature which unites the protrusions, is that they are substantially non-deformable. Preferably, the protrusions and base member of the embodiments shown in FIGS. 7-9 are formed to have a durometer hardness of somewhere between about 75 and 95, Shore A. As will be appreciated, protrusions of this hardness are not completely non-deformable, such as would be the case with protrusions which comprise a sand grit. Conversely, protrusions 62 are not substantially deformable when engaging a puck surface, as one might expect from the "hooks" or "eyes" typically associated with a VELCRO cloth material. Rather, the protrusions 62 should be substantially stiff enough to engage the recesses 38, and in some cases, to become nested in the recesses 38, but still be soft enough to give the user some "feel", and to reduce the velocity of deflection of the puck on the applique (e.g., 51) when the puck 30 strikes the applique bearing blade.

As is best shown in FIG. 7, the protrusions 62 are preferably received in the recesses 38 of the side surface 34 of the puck 30. Because of the particular pattern (discussed in connection with FIGS. 8 and 9), not every protrusion 62 is likely to find a corresponding recess 38, nor are all recesses 38 likely to have a mating protrusion 62.

The appliques 51, 69 shown in FIGS. 7-9 are intended primarily for use by forwards on their hockey sticks 10. Because of the function performed by a forward, the appliques shown in FIGS. 7-9 are intended primarily to produce a somewhat "neutral" direction influencing characteristic of the blade when the blade is being used to "catch" a puck, such as when a forward is using his blade to catch a passed puck. Additionally, the appliques of FIGS. 7-9 are intended to have a primarily "neutral" direction influencing means when the forward is using the stick to control the puck, such as when he is advancing the puck down the ice. The enhanced frictional engagement between the puck and the stick that is provided by the appliques 51, 69 of FIGS. 7-9 help to enable the user to better control the puck as the forward is advancing it down the ice, by making the applique, and hence the stick, "grippier."

An applique 69 having a most preferred protrusion pattern 70 is shown in FIGS. 8 and 9. The protrusion pattern 70 has been found by the applicants to be configured to maximize the likelihood that the protrusions (e.g., protrusion 72) will become engaged within the recesses 38 of the pucks of all of the three patterns (Czechoslovakian, Canadian/Slovakian, and Chinese) discussed above.

The drawing shown in FIG. 8 shows the pattern 70 as being enlarged 5 times from its actual size. In actuality, the pattern 70 shown in FIG. 8 will have a length and width each of $\frac{1}{4}$ ths inch. The preferred dimensions for the pattern shown in FIG. 8 are given below, with reference to the letters shown in FIG. 8.

Letter Designation	Dimension
A	0.433 inch
B	0.107 inch
C	0.144 inch
D	0.070 inch
E	0.254 inch

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-continued

Letter Designation	Dimension
F	0.125 inch
G	0.250 inch
I	0.030 inch
J	0.032 inch
K	0.250 inch
M	0.021 inch
N	60°
P	0.01 inch
Q	0.02 inch

The protrusions generally are arrayed in a repeating pattern of first rows of protrusions and second rows of protrusions. Although the assignment of protrusion groups to "rows" is somewhat arbitrary, for purposes of this discussion, it will be assumed that the rows extend at approximately 60° angles (angle N) from a longitudinal axis X of the pattern. Although the preferred angle N at which the rows are canted is 60°, the rows can be angled anywhere generally between about 45° and 70° from axis X. The rows 75, 76 are preferably disposed at about 0.1 inches apart (B—B) to leave some free space therebetween.

The first and second rows 75, 76 each comprise an ordered array of protrusions in a repeating pattern, wherein the first row and the second row are repeated throughout the particular "pattern", and, in fact, throughout the entire length of the patch or tape roll which comprises the applique 50. First row 75 includes a series of two protrusion groups, including a first protrusion group 78 and a second protrusion group 80. The first protrusion group 78 comprises a single protrusion, and the second protrusion group 80 comprises a pair of closely spaced protrusions. As one moves up row 75, it will be noticed that row 75 comprises a repeating pattern of first and second protrusion groups 78, 80 throughout the pattern.

Second protrusion row 76 also comprises an alternating array of first and second protrusion groups 82, 84. The first protrusion group 82 comprises a pair of closely spaced protrusions, and the second protrusion group 84 comprises a "diamond-shaped" array of four protrusions.

A single protrusion 86 is shown in cross section in FIG. 9 as being generally hemispherical or "pimple" shaped in configuration and having a height P—P to cause the protrusion to extend approximately 0.1 inches above the first surface 56 of the applique 50. The diameter of the protrusion Q—Q is approximately 0.02 inches. The size and hemispherical shape of the protrusions is believed by applicant to maximize the ability of the protrusion 86 to become inserted into a recess 38 formed in the side surface 34 of the hockey puck 30, regardless of whether the hockey puck uses a "Canadian/Slovakian", "Czechoslovakian", or "Chinese" side surface pattern. In tests conducted by the applicant, using the pattern discussed above, the applicant found that the particular pattern greatly improved the frictional engagement between the applique 50 and the side surface 34 of the hockey puck, and resulted in an approximately 69% increase in the average friction coefficient, when compared to a multi-purpose such as is typically used currently on hockey stick blades 18.

Although the protrusions discussed in connection with applique 69 have their most obvious utility when used in connection with an ice hockey puck, the applicants have found that the applique 69 works very well with smooth surfaced game pieces such as street hockey pucks and street hockey balls. When used with smooth surfaced game pieces,

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applique 69 is believed to increase the player's control of the game piece by increasing the frictional co-efficient between the game piece and the applique 69, thereby giving the user an enhanced ability to lift and spin the game piece. This enhanced ability to lift, spin and control the game piece also occurs with ice hockey pucks.

As stated above, the protrusions, such as protrusion 82, should be substantially non-deformable, and have a durometer hardness of preferably between about 75 and 95, Shore A. To create these protrusions, having this hardness, the base material 54 should be preferably made from a PVC type material, having a thickness of between about 0.08 and 0.14 inches. An adhesive is applied to the second side surface in a conventional manner. A release liner will be attached to the second surface, which is removed before the second surface of the applique is applied to the blade of the stick. The protrusions are formed on the first side surface by embossing the protrusions onto the base member.

An alternate embodiment pattern for an applique 88 is shown in FIG. 10. The applique 88 shown in FIG. 10 includes a cross-hatched pattern of recesses 66 which extend downwardly, generally below the level of the first surface 90. The recesses 66 are formed in a cross-hatched pattern and are sized and positioned for maximizing their reception of the cross-hatched series of ridges 36 formed on the side surface 34 of the hockey puck 30. As will be appreciated, the recesses 66 should be slightly wider, and slightly deeper, than the corresponding ridges of the side surface 34 of the hockey puck 30, to maximize the ability of the cross-hatched recesses 66 to receive the cross-hatched protrusions 36 of the hockey puck 30.

FIGS. 11 and 12 show various wrapping patterns that can be used with appliques of the present invention that are provided in tape roll form. It is believed by the applicant that the more traditional vertical wrap pattern 92 will likely be used by most players, and especially by ice hockey players. However, the alternate, "horizontal wrap" 94 will likely be preferred by street hockey players so that the row of holes 95 across the upper portion of the blade will continue to remain exposed, and not be covered up by the applique.

Another alternate embodiment for an applique 98 is shown in FIG. 13. Applique 98 includes base member 99 having a first surface 101, and a second surface 103. Second surface 103 has an adhesive applied thereto, for enabling the second surface 103 to be adhesively attached to the surface of a hockey stick. The first surface 101 includes a series of direction influencing means for influencing the direction of deflection of the game piece (puck 30) off the first surface 101 toward a predetermined direction. The direction influencing means comprise a series of ridges, including first ridge 102, second ridge 104, and third ridge 106. The first, second and third ridges, 102, 104, 106, are preferably disposed in a parallel relation both to each other, and to the major axis X of the applique 98. The ridges, 102, 104, 106, define a series of parallel, incrementally raised steps, including first step 108, second step 110 and third step 112. The second step 110 has a relatively raised level, compared to the first step 108, and the third step 112 has a relatively raised level when compared to the second step 110. Preferably, the second step 110 is between about 0.01 and 0.04 inches thicker than the first step 108, and the third step 112 is between about 0.01 and 0.04 inches thicker than the second step 110. Additionally, each of the steps 108, 110, 112 has a width W (FIG. 13) of between about 0.2 and 0.5 inches.

Most preferably, the first step 108 has a thickness (including its base member) of about 0.008 inches; the

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second step 110 has a thickness of about 0.028 inches; and the third step 112 has a thickness of about 0.048 inches. Additionally, each of the steps 108, 110, 112 has a width W of approximately 0.333 inches. Thus, for an applique, such as applique 98 having a 3-step, 108, 110, 112 configuration, the entire width of applique 98 would be approximately 1 inch. Additionally, the angle formed by the plane of the second surface 103, and the average rise of the steps 108, 110, 112 of the first surface 101 would be approximately 4°.

The ridges 102, 104, 106 and steps 108, 110, 112 help to deflect a puck in direction which is generally downwardly toward the ice. It has been found by the applicant that the size and position of the ridges 102, 104, 106 help to contribute to this downward deflection through the engagement of the ridges 102, 104, 106 with the ridges 35, 36 and 37 of the puck. Further, the 40 overall angle of the applique helps ensure that the puck 30 does not strike the applique flushly.

Preferably, applique 98 is formed by an extrusion process, with the base member being made from a PVC type material having a durometer hardness of preferably between about 65 and 85, Shore A.

The pattern shown in FIGS. 13 and 14 differs somewhat in purpose from the pattern 70 shown in FIGS. 8 and 9.

The primary purpose of the protrusion pattern 70 (FIG. 8) is to increase the frictional engagement between the applique 50 and the side surface 34 of the hockey puck. However, the engagement between the applique 69 and the side surface 34 of the hockey puck 30 is intended to be somewhat neutral and is not necessarily designed to influence the direction in which a puck will deflect off the surface of the applique 69. As such, a puck striking an applique 69 made with the pattern 70 (FIG. 8) is no more likely to be influenced to deflect upwardly than it is to deflect downwardly, and is no more likely to be influenced to bounce to the left, then it is to the right.

Notwithstanding this apparent neutrality of pattern 70 in the direction of deflection when a puck strikes the pattern, the applicants have found that a puck shot with a stick 10 containing pattern 70 will tend to be influenced to lift and spin. It is believed that this tendency to lift and spin is caused by a combination of the enhanced frictional engagement of the puck and pattern 70, and the arcuate line of swing usually employed by a player shooting a puck.

However, the pattern 98 shown in FIGS. 13-15 is designed to influence the direction in which a puck will deflect, and the velocity of its deflection due to the softness of the applique. The particular pattern 98 shown in FIG. 13 is intended, when positioned on a hockey stick blade 20, such as shown in FIG. 15, to influence a puck striking the surface of the applique bands 98A, 98B, 98C in a downward direction toward the surface of the ice.

The job of a goalie is to deflect oncoming pucks which are shot at the goal. From the goalie's perspective, it is most advantageous if the shot can be stopped "soft" wherein the goalie retains the puck against his stick, so that he can either trap it to prevent a goal, or otherwise pass or direct it to one of his teammates. Goalies strive to avoid the situation wherein the puck bounces upwardly and becomes airborne. For these reasons, the goalies are motivated to deflect the puck downwardly onto the ice (or street) to better maintain control thereby.

The applique 98 shown in FIGS. 13-15 is designed to increase the likelihood that a puck striking the applique 98 will be deflected downwardly, when compared to known hockey tapes. The combination of the progressively thicker

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top portion (e.g., step 112), and ridges 102, 104, 106, help to capture the side and "corners" of the puck to drive it downwardly toward the ice. As such, the ridges 102, 104, 106 and steps, 108, 110, 112 comprise direction influencing vehicles for influencing the direction of a puck which strikes them to deflect off of the ridges 102, 104, 106 and steps, 108, 110, 112 in a predetermined direction. Although all pucks which hit the ridges 102, 104, 106 and steps 108, 110, 112 will not be deflected downwardly, the steps and ridges help to influence the puck to deflect downwardly, and increase the likelihood that a puck will deflect downwardly.

Turning now to FIG. 15, the applique 98 is shown as being applied to a blade 20 of a goalie's stick. Three bands 98A, 98B and 98C, of the applique 98 are applied generally horizontally across the front face 114 of the blade 20, and extend all the way between the heel and toe of the hockey stick blade. Although not shown, the applique 98 can be applied to the back side face and handle portion of the stick.

An alternate wrapping pattern 116 is shown in FIG. 16, as including a first strip 120, second strip 124 and third strip 126 which are disposed generally horizontally along the blade 20 of the hockey stick. However, the heel end 125 of the hockey stick includes a fourth strip 128 and a fifth strip 130 that are positioned at a diagonal to horizontal. Similarly, the toe end 131 includes a sixth strip 132 and a seventh strip 134 that are positioned at a diagonal to the horizontal. This particular wrap arrangement is believed to be beneficial to the goalie by influencing pucks which deflect off the stick 20 to bounce downwardly toward the ice, and also toward the middle of the stick. As will be appreciated, the horizontally disposed first, second and third strips, 120, 124, 126 will cause the puck to deflect downwardly toward the ice. The diagonal strips 128, 130, 132, 134 will cause the puck to bounce both downwardly toward the ice, and inwardly toward the center of the stick.

As is true in any sport, it is likely that users of the appliques will find an endless variety of patterns in which to apply the appliques to their sticks to achieve both perceived and real functional and aesthetic advantages.

FIGS. 17-31 show a variety of alternate embodiment appliques which include protrusion arrays and patterns that are designed to influence the direction in which a puck deflects off the surface of the applique, to influence the puck to move in a predetermined direction. Many of the appliques shown in FIGS. 17-23 are intended for use primarily with forward's hockey sticks 10. As such, the "deflection" that will be influenced will primarily be the deflection of the puck off the applique when the user shoots or passes the puck with the stick 10. This is in contrast to the primary "deflection" of the direction influencing means of pattern 98 which is used on a goalie's stick. As is discussed above, the primary deflection that is influenced by pattern 98 is the deflection off the applique 98 when a puck is shot at the goalie, and he is using his stick 12, and the applique 98 thereon to stop the puck or to direct it to one side of the net or to his teammates.

The appliques shown in FIGS. 17-23 are intended primarily for use by forwards on their hockey sticks 10. Because of the function performed by a forward, the appliques shown in FIGS. 17-23 have incorporated direction influencing protrusions which are intended primarily to effect the deflection of the puck when shot by the user, such as by inducing the puck to spin or to lift off the ice and become airborne. Additionally, as much of the function performed by a forward is to advance the puck down the ice while controlling it on the blade 18 of the stick 10, the

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appliques shown in FIGS. 17-23 are also intended to help increase the frictional engagement between the surface 34 of the puck 30 and the applique (and hence hockey stick) to enable the user to better control the puck as he is advancing it down the ice.

The appliques shown in FIGS. 24-31 are intended primarily for use by goalies. As such, these appliques have direction influencing protrusions whose primary purpose is to drive the puck downwardly toward the ice to help the goalie maintain control of the puck, and to prevent the puck 30 from becoming airborne if it deflects from the goalie's stick 12. Additionally, the protrusion patterns shown on the appliques of FIGS. 24-31 are also intended to help increase the frictional engagement between the applique and the side surface 34 of the hockey puck, to help the goalie better control the puck 30 on his stick 12.

The applique 150 shown in FIG. 17 contains a plurality of generally parallelly disposed longitudinal ridge members 152. The ridge members 152 are not continuous, but generally comprise ridge member segments.

The applique 156 shown in FIG. 18 is intended to give both spin and lift to a puck which is deflected from its surface. The applique 156 includes a series of protrusions 158, which each include a longitudinal trunk portion 160, and series of lateral, generally linear branch portions 152, which are connected to, and extend from the trunk portions 160.

The applique 166 shown in FIG. 19 includes an array of generally linear, laterally extending ridge type protrusions 168. It is believed that the protrusions 168 of applique 166 will help to influence a puck being shot from the stick to move in a pre-determined, spinning direction.

Applique 172 of FIG. 20 includes a series of protrusions 174 having a longitudinal trunk portion 176, and a series of generally "s"-shaped laterally extending branch portions 158 which are connected with the trunk portions 176, and extend generally laterally therefrom.

Applique 182 of FIG. 21 includes a series of generally laterally extending, crescent-shaped protrusions 184.

FIG. 22 shows an applique 188 having a series of generally longitudinally extending "s"-shaped protrusions 190 which are believed by applicant to influence a puck being deflected off the stick to spin.

The applique 194 of FIG. 23 is been intended primarily to help increase the frictional engagement between the applique 194 and the side surface 34 of the hockey puck 30, to better enhance the user's control of the puck. Applique 194 includes an array of cross-hatched ridge type protrusions 196. As stated above, the applique shown in FIGS. 24-31 are intended primarily for use by goalies, and as such are intended to influence the puck to be directed downwardly when deflected off of the applique, and also to enhance the goalie's control of the puck.

FIG. 24 shows an applique 200 that is intended primarily to drive the puck downwardly toward the ice, by including a series of chevron-shaped protrusions 202.

FIG. 25 discloses an applique 206 having a plurality of chevron-shaped protrusions 208 and a series of hemispherical, or flattened hemispherical "pimple" shaped protrusions 210, which are nested within the chevron protrusions 208.

Applique 214 of FIG. 26 includes a series of "y"-shaped protrusions 216, each of which include a companion hemispherical, or flattened hemispherical "pimple" shaped protrusion 218 that nests within the branches of the y-shaped protrusions 216.

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The applique 222 of FIG. 27 contains a series of chevron shaped protrusions 224, wherein each of the chevron shaped protrusions 224 includes a series of branches 226 extending therefrom. As shown, the branches may extend generally perpendicular to the extent of the chevron leg to which they are attached, or alternately, may be disposed at some other angle.

The applique 230 of FIG. 28 contains a series of hemispherical, or flattened hemispherical, "pimple" shaped protrusions 232.

The applique 234 of FIG. 29 includes an array of closely spaced, truncated chevron shaped protrusions 236.

Applique 240, which is shown in FIG. 30, includes a series of chevron shaped protrusions 242. Each of the chevron shaped protrusions 242 includes a series of "s"-shaped branches which extend in a generally longitudinal direction.

The applique 248 shown in FIG. 31 includes a series of longitudinal trunk-shaped protrusions 250. A plurality of chevron-shaped branches 252 are attached to each of the longitudinal trunks 250.

An applique 270 for improving the user's grip on the handle 14 of a hockey stick is shown in FIGS. 32 and 33. The applique 270 includes a base member 272 having a second surface (not shown) to which an adhesive is applied, for adhesively attaching the base member 272 to the handle 14 of the hockey stick. The applique 270 also includes a first surface 274 having a longitudinally extending ridge member 276 formed thereon. If applique 270 is provided as a "roll" in a manner similar to conventional hockey tape, the ridge member 276 would preferably extend throughout the entire length of the applique 270. The applique 270 has a width W—W of approximately one inch. The ridge 276 is preferably centrally disposed along the longitudinal axis of the applique 270, so that it is equally spaced from each of the two sides 277, 279 of the applique. The ridge, has a height of preferably about 1/4th inch, and a width R'—R' of approximately 1/4th inch.

As best shown in FIG. 33, the applique 270 is placed in a series of adjacent, or slightly overlapping bands on the handle 14 of the hockey stick, near the end of the handle 14. In FIG. 33, four bands, 270A, 270B, 270C and 270D of applique 270 are shown as being applied in an adjacent, non-overlapping relationship on the handle 14. When so placed, the handle includes four ridges 276A, 276B, 276C and 276D, with each corresponding to their respective band 270A-D of the applique 270 and with each extending at about a 45° angle to longitudinal axis of the handle. When so positioned, the distance D between adjacent ridges (e.g., 276A and 276B; and 276C and 276D) is approximately one inch. This width is chosen as it provides the user with enough room to generally place one gloved finger between each adjacent ridge pair. For example, in the illustration shown in FIG. 33, the user would preferably place his "pinky" finger between ridges 276A and 276B; his third finger between ridges 276B and 276C; his second finger between ridges 276C and 276D; and his index finger below ridge 276D.

The existence of the ridges helps to prevent the user's gloved hands from slipping up and down on the hockey stick. Additionally, the ridges help to cause the user to place his fingers in a consistent position on the hockey stick. This consistency in the positioning of the user's fingers should help to improve the user's ability to manipulate the stick and to shoot the puck 30.

An applique configuration 288 is shown in FIG. 34, which includes a first applique portion 290 and a second applique

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portion 292. The first applique portion 290 includes a series of first direction influencing means 294 for influencing the puck to deflect from the applique 290 in a first predetermined direction. A second applique portion 292 includes a series of second direction influencing means 296 which are designed for influencing the puck to deflect off the second applique portion 292 in a second predetermined direction, which may or may not be different than the first predetermined direction in which first applique portion 290 deflects the puck.

The first applique portion 290 can be an applique similar to applique 98, which is shown in FIGS. 13-16. As discussed above, the purpose of the direction influencing means 294 of an applique, such as appliques 98 or 290, is to drive the puck downwardly toward the ice. The second direction influencing means 296 of the second applique portion 292 are similar to the respective protrusions 158 and applique 156 shown in FIG. 18. As discussed in connection with FIG. 18, the purpose of the second direction influencing means 296 is to induce a puck to move in a predetermined "spin" direction, and to cause the puck further to lift off the ice when shot.

The two zone applique configuration 288 shown in FIG. 34 might be used by a forward on the blade 18 of his hockey stick, to enable the forward to achieve two different desired goals with his applique 288. The upper, first applique portion 290 would tend to drive the puck downwardly towards the ice. This would help to improve the forward's control of pucks that the forward is receiving from teammates, or intercepting from other players. The bottom, second applique portion 292 would help the forward to direct the puck in an intended, "lift and spin" direction when the forward is shooting the puck at the goal, or passing it to teammates. As such, through the use of the two zone protrusion, the user could obtain two different sets of advantages, which would help the user in two different circumstances encountered during the play of a hockey game.

Although the invention has been described in detail with reference to the illustrated preferred embodiments, variations and modifications exist within the scope and spirit of the invention as described and as defined in the following claims.

What is claimed is:

1. An applique for placement on a hockey stick blade for improving the engagement of the hockey stick blade with a hockey puck, said puck having a cylindrically vertically extending peripheral surface, said surface having an ordered array of recesses therein, said hockey puck being pushable along a playing surface by the hockey stick, the applique comprising

- (1) a base member having a first surface and a second surface,
- (2) means for adhesively attaching the second surface to the hockey stick blade, and
- (3) an ordered array of substantially non-deforming protrusions extending above the first surface for engaging said recesses in said hockey puck, wherein the engagement of the protrusions with the recesses facilitates temporary maintenance of the engagement between the hockey stick blade and the recess containing surface of the hockey puck when the hockey stick is pushing said hockey puck along the playing surface.

2. The device of claim 1 wherein said array of protrusions is ordered to maximize the probability of the insertion of the protrusions of the applique into the recesses in the puck.

3. The device of claim 2 wherein the ordered array of protrusions comprises a repeating pattern of first rows of

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protrusions and second rows of protrusions, the first rows of protrusions being different from the second rows of protrusions.

4. The device of claim 3 wherein the first rows of protrusions comprise a repeating pattern of first and second protrusion sets, and the second rows of protrusions comprise a repeating pattern of first and second protrusion sets.

5. The device of claim 4 wherein

- (a) the first protrusion set of the first rows comprises a set containing a single protrusion,
- (b) the second protrusion set of the first rows comprises a set containing a pair of protrusions,
- (c) the first protrusion set of the second rows comprises a set containing a pair of protrusions, and
- (e) the second protrusion group set comprises a set containing four protrusions.

6. The device of claim 5 wherein the applique includes a longitudinal axis, and the rows extend at an angle from the longitudinal axis of the applique of between about 45 degrees and 75 degrees, and the distance between adjacent rows is about 0.1 inches.

7. The device of claim 1 wherein the protrusions extend about 0.01 inches above the second surface, and have a durometer hardness of between about 75 and 95, Shore A.

8. The device of claim 1 wherein the ordered array of protrusions comprises repeating, alternating rows of protrusions including a first row of protrusions and a second row of protrusions, the first and second rows each including a series of protrusion sets.

9. The device of claim 8 wherein the protrusion sets of at least one of the first and second rows comprises an alternating series of first protrusion sets and second protrusion sets, said protrusion sets being positioned to maximize the probability of insertion of the protrusions into recesses of the game piece.

10. The device of claim 1 wherein the applique comprises a flexible tape.

11. The device of claim 10 wherein the game piece surface includes an ordered array of protruding portions, and the applique includes an ordered array of recesses that are sized and positioned to maximize the engagement of the recesses with the protruding portions of the hockey puck.

12. An applique for placement on a hockey stick blade for improving the engagement of the hockey stick blade with a game piece, said game piece having a cylindrical vertically extending peripheral surface, said surface having an orderly array of recesses therein, said applique comprising

- (1) a base member having a first surface and a second surface,
- (2) means for adhesively attaching the second surface to the hockey stick blade, and
- (3) an ordered array of substantially non-deforming protrusions extending above the first surface for engaging the game piece surface,

wherein the protrusions are generally hemispherical in shape, and are sized for engaging the recesses in said game piece surface.

13. An applique for placement on a hockey stick blade for improving the engagement of the hockey stick blade with a hockey puck said hockey puck having a cylindrical vertically extending peripheral surface, said surface having an ordered array of recesses therein the hockey puck being pushable along a playing surface by the hockey stick, a hockey stick having a blade the applique comprising

- (1) a base member having a first surface and a second surface,

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(2) means for adhesively attaching the second surface to the hockey stick blade, and

(3) an ordered array of substantially non-deforming protrusions extending above the first surface for engaging the recesses in said surface,

wherein the ordered array of protrusions comprises a repeating pattern that includes a first row of protrusions and a second row of protrusions, the first row of protrusions being different from the second row of protrusions.

14. An applique for placement on a hockey stick blade for improving the engagement of the hockey stick blade with a hockey puck, said puck having a cylindrical vertically extending surface, said surface having an ordered array of protrusions therein said hockey puck being pushable along a playing surface by a hockey stick having a blade, said applique comprising

(1) a base member made from a non-water absorbent material having a first surface and a second surface,

(2) means for adhesively attaching the second surface to the hockey stick blade, and

(3) an ordered array of non-deforming protrusions extending above the first surface for engaging said recesses in said puck surface, said ordered array of protrusions comprising a repeating pattern of first rows of protrusions and second rows of protrusions, the first rows of protrusions comprising a repeating pattern of first and second protrusion sets, and the second rows of protrusions comprising a repeating pattern of first and second protrusion sets, the protrusion sets of the first rows of

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protrusions being different than the protrusion sets of the second rows of protrusions,

wherein the engagement of the protrusions with the recesses facilitates temporary maintenance of the engagement between the hockey stick blade and the hockey puck when the hockey stick is pushing the hockey puck along a playing surface.

15. An applique for placement on a hockey stick blade for improving the engagement of the hockey stick blade with a hockey puck said puck having a cylindrical vertically extending surface, said surface having an ordered array of recesses therein, said hockey puck being pushable along a playing surface by the hockey stick, said applique comprising

(1) a base member having a first surface and a second surface,

(2) means for adhesively attaching the second surface to the hockey stick blade, and

(3) an ordered array of substantially non-deforming protrusions having a durometer hardness of between about 75 and 95, Shore A, the protrusions extending about 0.01 inches above the first surface for engagement with the recesses in said hockey puck,

wherein the engagement of the protrusions with the recesses facilitates temporary maintenance of the engagement between the hockey stick and the recess containing surface of the hockey puck when the hockey stick is pushing hockey puck along the playing surface.

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(45) Date of Patent: **Dec. 30, 2003**

(54) **SOUND-DEADENED WALL AND WALL PANEL FOR SAME**

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(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 27 days.

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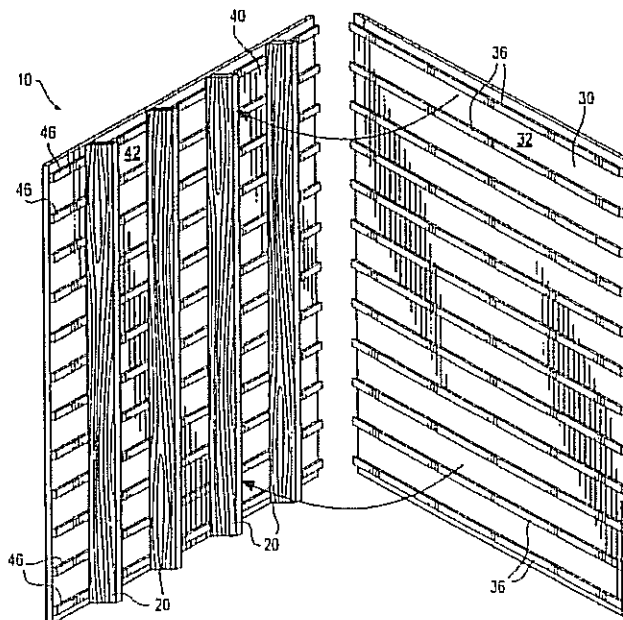
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(57) **ABSTRACT**

In a sound-deadened wall comprising wooden studs, each of which has a front edge and a back edge, a front wall panel is fastened to the front edges of the studs and a back wall panel is fastened to the back edges of the studs. Further, front spacers are positioned along the front edge of each stud, between the front edge of said stud and the front wall panel, so as to define air gaps between the front edge of said stud and the front wall panel, and back spacers are positioned along the back edge of each stud, between the back edge of said stud and the back wall panel, so as to define air gaps between the back edge of said stud and the back wall panel. Each wall panel has two expansive surfaces and the associated spacers are defined by elastomeric strips adhering to such wall panel, on the expansive face to face the associated edges of the studs, before such wall panel is fastened to the associated edges of the studs. Screws are driven through the wall panels, through the elastomeric strips, into the studs to fasten the wall panels to the studs.

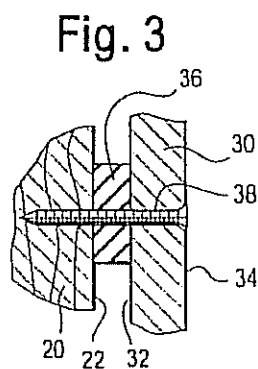
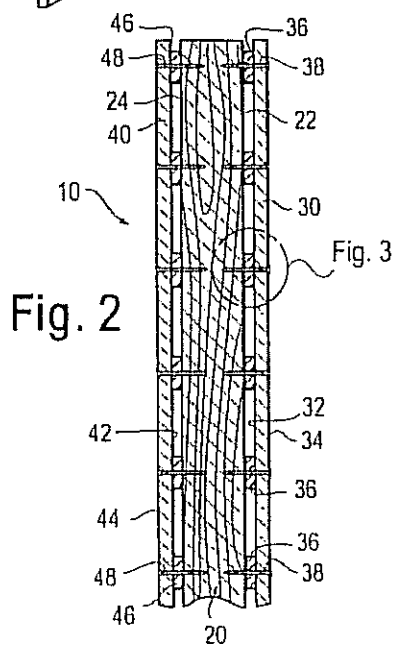
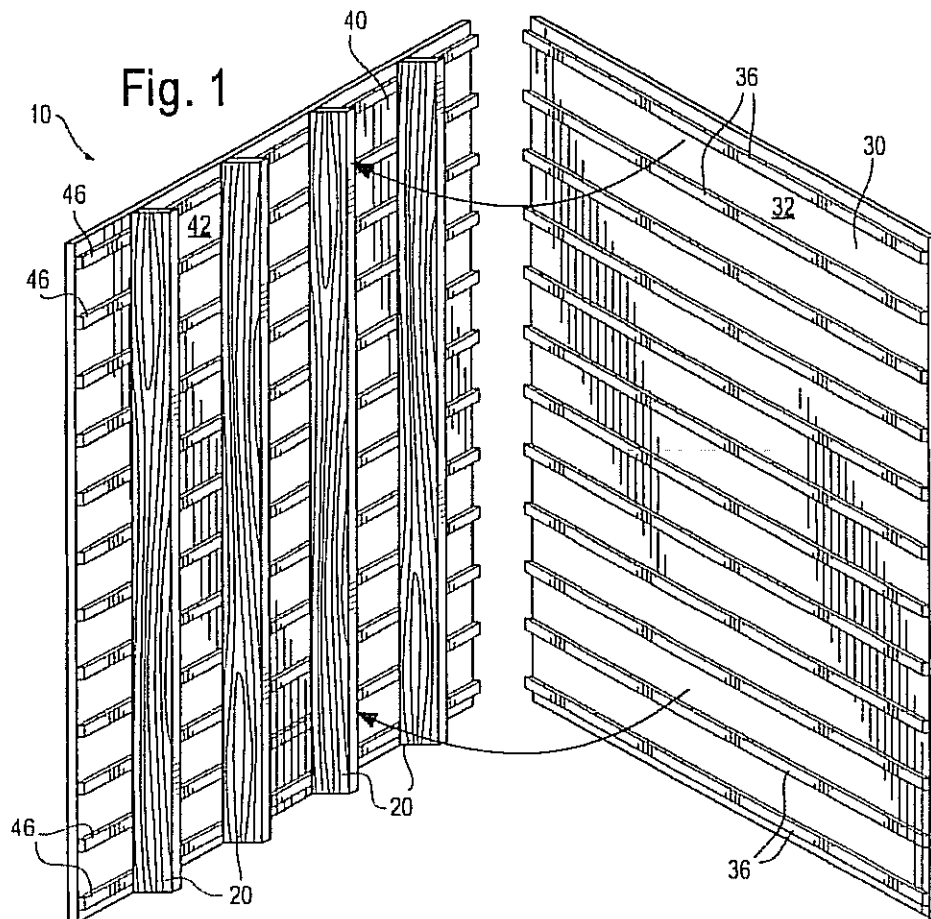
6 Claims, 1 Drawing Sheet



U.S. Patent

Dec. 30, 2003

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SOUND-DEADENED WALL AND WALL PANEL FOR SAME

FIELD OF THE INVENTION

This invention pertains to a sound-deadened wall and to a wall panel, such as a panel of gypsum drywall board or of fiberboard, for a sound-deadened wall. This invention contemplates that, in a sound-deadened wall embodying this invention, spacers define air gaps between studs and the wall panel.

BACKGROUND OF THE INVENTION

Commonly, in residential and commercial construction, interior walls are constructed with vertical wooden or steel studs, to which gypsum drywall or fiberboard panels are fastened, as by screws driven through the panels into the studs. Sounds tend to be easily transmitted through such walls, as from one room to another, unless such walls are insulated sufficiently with sound-deadening insulation, such as fiberglass mats.

SUMMARY OF THE INVENTION

This invention provides a sound-deadened wall, which does not require sound-deadening insulation. Broadly, the sound-deadened wall comprises studs, a wall panel fastened to the studs, and spacers positioned along each stud, between said stud and the wall panel, so as to define air gaps between said stud and the wall panel. This invention is useful whether the studs are wooden or steel and whether the wall panel is a panel of gypsum drywall or of fiberboard.

Preferably, in a sound-deadened wall embodying this invention, the spacers are elastomeric. Moreover, the spacers may be advantageously defined by elastomeric strips adhering to the wall panel, on the expansive surface to face the studs, before the wall panel is fastened to the studs. Preferably, the wall panel is fastened to the studs by fasteners driven through the wall panel, through the spacers, into the studs. The fasteners may be screws or, if the studs are wooden, the fasteners may be staples, ring-shanked nails, or other nails.

In a preferred embodiment, in which each stud has a front edge and a back edge, a front wall panel is fastened to the front edges of the studs with front spacers positioned along each stud, between said stud and the front wall panel, so as to define air gaps between said stud and the wall panel. Moreover, a back wall panel is fastened to the back edges of the studs with back spacers positioned along each stud, between said stud and the back wall panel, so as to define air gaps between said stud and the wall panel.

This invention also provides a wall panel, which is useful in a sound-deadening wall, as described above. The wall panel, which has two expansive surfaces and which is fastenable to studs, has spacers adhering to a selected one of the expansive surfaces. The spacers are adapted to define air gaps between the studs and the wall panel when the wall panel is fastened to the studs.

Preferably, in a wall panel embodying this invention, the spacers are elastomeric. Moreover, the spacers may be advantageously defined by elastomeric strips adhering to the wall panel, on the expansive surface to face the studs, before the wall panel is fastened to the studs.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a fragmentary, partially exploded view of a wall panel having elastomeric strips defining spacers, as dis-

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cussed above, and being fastened to studs so as to provide a sound-deadened wall embodying this invention.

FIG. 2 is a cross-section of the sound-deadened wall, which has a front wall panel and a back wall panel, as discussed above.

FIG. 3 is an enlarged detail, as taken in a region delineated by a broken-line circle in FIG. 2.

DETAILED DESCRIPTION OF THE ILLUSTRATED EMBODIMENT

As illustrated, a sound-deadened wall 10 embodying this invention is constructed from an array of wooden studs 20 extending vertically, a front wall panel 30 fastened to the studs 20, and a back wall panel 40 fastened to the studs 20. Each stud 20 has a front edge 22 and a back edge 24. The respective wall panels 30, 40, are similar and are fastened to the studs 20 similarly.

The front wall panel 30, which has two expansive surfaces 32, 34, has an array of elastomeric strips 36 extending horizontally and adhering to the expansive surface 32 that faces the front edges 22 when the front wall panel 30 is fastened to the studs 20. The front wall panel 30 is fastened to the studs 20, at the front edges 22, via screws 38 driven through the front wall panel 30, through the elastomeric strips 36, into the studs 20. The elastomeric strips 36 define air gaps between the studs 20 and the front wall panel 30.

The back wall panel 40, which has two expansive surfaces 42, 44, has an array of elastomeric strips 46 extending horizontally and adhering to the expansive surface 42 that faces the back edges 24 when the back wall panel 40 is fastened to the studs 20 at the back edges 24. The back wall panel 40 is fastened to the studs 20, at the back edges 24, via screws 48 driven through the back wall panel 40, through the elastomeric strips 46, into the studs 20. The elastomeric strips 46 define air gaps between the studs 20 and the back wall panel 40.

Each wall panel 30, 40, may be a panel of gypsum drywall or of fiberboard, which is preferred. The elastomeric strips 36, 46, are similar and may be made of a synthetic rubber, such as neoprene, of a polymeric foam, such as polyurethane foam, or of an elastomeric polymer, such as polyvinyl chloride having a hardness of Durometer 92 Shore A. Any suitable adhesive is used to cause the elastomeric strips 36, 46, to adhere to the respective wall panels 30, 40. Alternatively, but less desirably, non-elastomeric spacers are used.

Air gaps defined by the elastomeric strips 36, between the studs 20 and the front wall panel 30, and air gaps defined by the elastomeric strips 46, between the studs 20 and the back wall panel 40, tend to muffle sounds that would be easily transmitted between the respective wall panels 30, 40, if the respective wall panels 30, 40, were to contact the studs 20 directly.

What is claimed is:

1. A sound-deadened wall comprising wall studs, a wall panel fastened to the studs, elastomeric spacers adhering to the wall panel between said studs and the wall panel and being oriented so as to cross the studs and to define air gaps between said studs and the wall panel, and wherein the wall panel is fastened to the studs by fasteners driven through the wall panel, through the spacers, into the studs.

2. The sound-deadened wall of claim 1 wherein the wall panel has two expansive surfaces and wherein the elastomeric spacers are defined by strips adhering to the wall panel, on the expansive face to face the studs, before the wall panel is fastened to the studs.

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3. A sound-deadened wall comprising wall studs, each stud having a front edge and a back edge, a front wall panel fastened to the front edges of the studs and a back wall panel fastened to the back edges of the studs, front elastomeric spacers adhering to the front wall panel between the front edge of said studs and the front wall panel, and being oriented so as to cross the studs and to define air gaps between the front edge of said stud studs and the front wall panel, wherein the front wall panel is fastened to the studs by fasteners driven through the front wall panel, through the front spacers, into the studs, and back elastomeric spacers adhering to the back wall panel between the back edge of said studs and the back wall panel, oriented so as to cross the studs and to define air gaps between the back edge of said stud and the back wall panel, wherein the back wall panel is fastened to the studs by fasteners driven through the back wall panel, through the back spacers, into the studs.

4. The sound-deadened wall of claim 3 wherein the front wall panel has two expansive surfaces and wherein the front elastomeric spacers are defined by strips adhering to the front wall panel, on the expansive face to face the front

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edges of the studs, before the wall panel is fastened to the front edges of the studs and wherein the back wall panel has two expansive surfaces and wherein the back elastomeric spacers are defined by strips adhering to the back wall panel, on the expansive face to face the back edges of the studs, before the back wall panel is fastened to the back edges of the studs.

5. A wall panel, which has two expansive surfaces, which is fastenable to studs, and which has elastomeric spacers adhering to a selected one of the expansive surfaces, the elastomeric spacers and being oriented so as to cross the studs and define air gaps between the studs and the wall panel when the wall panel is fastened to the studs, wherein the wall panel is fastened to the studs by fasteners driven through the wall panel, through the elastomeric spacers, into the studs.

6. The wall panel of claim 5 wherein the elastomeric spacers are defined by strips adhering to the selected one of the expansive surfaces.

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UNITED STATES PATENT OFFICE

2,559,990

INSULATING TAPE

Ralph J. Oace, New Canada Township, Ramsey County, and Robert Burns Snell and Esther E. Eastwood, St. Paul, Minn., assignors to Minnesota Mining & Manufacturing Company, St. Paul, Minn., a corporation of Delaware

No Drawing. Application January 12, 1946,
Serial No. 841,000

5 Claims. (Cl. 117-122)

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This invention relates to the insulation and protection of electrical conductors, and to insulating tape employed therein.

Synthetic polymeric materials have recently replaced rubber and guttapercha to a great extent in the insulation of wires and cables, particularly those exposed to outdoor conditions or to oils or solvents. Materials such as polyvinyl chloride and polymers of ethylene, for example, have been applied by extrusion methods to copper wires to provide insulated conductors having excellent electrical characteristics as well as good chemical and mechanical properties. Such insulated wire has been widely accepted as an improved product.

The advantages of such insulation are not fully realized, however, when splices between lengths of the wire must be covered with previously known classes of insulation. The commonly used unvulcanized rubber base electrician's tape, for example, is not resistant to oils or sunlight, and does not adhere well to the synthetic polymer insulation. The tape is also low in mechanical strength, and a bulky outer wrapping of friction tape is ordinarily required to provide compression and mechanical protection.

As an alternative to the use of rubber insulating tape, strips of polymer of the same formula as that on the insulated wire have sometimes been used. In such an application, heating and molding are necessary in order to weld the polymer together into an integral insulating layer. The process is inconvenient and time-consuming, and requires special apparatus.

Attempts have previously been made to provide similar strips, or films, of polymer with adhesive coatings so as to avoid the necessity of the subsequent heating and molding operations in covering and insulating wire splices. For example, polyvinyl chloride plasticized with not more than 20 parts of the usual plasticizer such as tricresyl phosphate or dioctyl phthalate has been sheeted out in roll form in thicknesses up to 4 mils or greater, and coated with a specific pressure-sensitive adhesive consisting of rubber, polyisobutylene, and a resinous material, in an attempt to produce a transparent flexible adhesive tape or sheet. With this amount of plasticizer, however, the sheet is found to be quite stiff and rigid. Very high stress is required to obtain any appreciable elongation; for example, a strip one inch in width and .004 inch in thickness of a mixture of 100 parts of an 89:11 vinyl chloride-vinyl acetate copolymer and 20 parts of dioctyl phthalate required a stress of 30 lbs. to

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produce even as little as 10% elongation. Increased elongation results in a whitening of the film, and the stretched film will then no longer retract to its original length at room temperature. Films, or coated adhesive tapes, having these properties cannot readily be applied by hand to wire splices or the like. While thinner films of similar composition might conceivably be used because of their reduced strength per unit of width, the low elasticity still precludes the acceptance of such tapes for applications such as the covering of wire splices. In addition, thicknesses of at least about four mils, and even up to twelve mils or somewhat higher, are generally preferred by electricians because of the reduced number of turns required for adequate insulation, as well as the absence of the filminess characteristic of thinner films.

Films have also been prepared with increased amounts of dioctyl phthalate or the like in an attempt to reduce the stress requirements and improve the elasticity. Thus, a composition consisting of 100 parts of a vinyl chloride polymer and 33 parts of dioctyl phthalate was calendered to a thickness of four mils and coated with a pressure-sensitive adhesive as hereinabove described. While the physical properties of the film were much improved, it was found that this particular adhesive as well as various other pressure-sensitive adhesives rapidly became soft and "pasty" when in contact with this or other vinyl polymer films containing more than about 20 parts of liquid type plasticizers. The resulting tape, when wound under tension around a splice or bundle of wires, soon loosened and became ineffective. This tendency was increased with even slight increase in temperature above normal room temperature.

The present invention avoids these and other defects of previously known insulating and binding materials of the type described, and provides, among other things, an improved insulated spliced electrical conductor which is electrically, mechanically and chemically effective, and which may be readily and quickly prepared without the use of special procedures or equipment.

These unique and valuable results are obtained by utilizing an insulating tape in the form of a relatively thick but easily stretchable and highly elastic pressure-sensitive adhesive tape comprising a well-bonded, water-insoluble, non-corrosive, normally tacky and pressure-sensitive adhesive coating on a plasticized vinyl chloride polymer film which is in permanent equilibrium with the adhesive. By "permanent equilibrium"

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It is meant that the pressure-sensitive adhesive layer neither softens (becomes "pasty") nor loses tackiness (becomes non-adherent) on prolonged contact with the backing or film layer. The adhesive remains aggressively tacky, and also remains "eucohesive" (by which it is meant that it is more cohesive than adhesive such that offsetting or transfer of adhesive material does not result when the tape is unwound from rolls or removed from surfaces to which temporarily applied and can be handled without transfer of adhesive material to the fingers).

In order to secure permanent equilibrium between backing and adhesive, we employ with the vinyl chloride polymer a combination of modifiers including a substantial but minor amount (not to exceed about 20 parts per 100 parts of the vinyl polymer) of a low molecular weight liquid plasticizer such as dioctyl phthalate, together with a substantially equal or somewhat greater amount of a high molecular weight resinous type plasticizer, the amount of the latter in any event being sufficient, together with the liquid plasticizer, to provide the desired degree of stretch in the final film. "Paraplex G-25" is a preferred example of a suitable resinous type plasticizer. It is sold by Resinous Products & Chemicals Corp., and is a soft, viscous alkyd resin having a specific gravity of 1.06, and an acid number of not more than 2.0; it is soluble in esters, ketones, aromatic and chlorinated hydrocarbons. Another high-molecular-weight plasticizer material which has been found useful in providing suitably stretchable and elastic vinyl polymer films is polymerized ethyl acrylate. Another example is polymerized vinyl butyl ether.

While resinous or high molecular weight modifiers such as "Paraplex G-25" are themselves capable of producing the desired degree of strength, stretch and elasticity in vinyl chloride polymer films, and furthermore are generally classed as "non-migrating" or "permanent" type modifiers or plasticizers, it is surprisingly found that these materials do not provide for permanent equilibrium of adhesive and backing as herein defined. Instead, it has been shown that pressure-sensitive adhesives in prolonged contact with highly stretchable and elastic films consisting solely of vinyl polymer and resinous modifier lose a great deal, if not all, of their initial tackiness or pressure-sensitivity. When tape made in this way is unwound from roll form, after a moderate period of storage, and applied to a splice, it does not adhere either to the electrical conductor or to its own backing, and hence is of no value as an insulating and protective coating.

The present invention provides an electrical insulating tape having properties of stretch and elasticity which render it highly effective for wrapping wire and cable splices. The tape is stretchable to the extent of at least about 50% at room temperature as measured in a tensile tester (such as a Serigraph Model I-P-4, manufactured by the Henry L. Scott Co. of Providence, R. I.). The tape can be readily stretched to this extent by pulling between the hands. In fact, the invention provides tapes which are stretchable to the extent of at least about 100%, which is preferred. The elasticity of the tape is a valuable feature in making possible snug wrappings and coverings. The present tape is highly elastic as shown by the fact that when a strip is elongated 30% at room temperature and then released it will retract at room temperature to substantially the original length. The inven-

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tion provides tapes that will substantially completely retract when elongated as much as 50% or even more. The method employed for making such retraction tests of elasticity is as follows. A number of tape lengths are cut. Each length is suspended from an upper clamp and is provided with a light clamp (weighing about 10 grams) at the lower end to provide means for applying a weight. Each tape strip is 1 inch wide and 5 inches long between clamps. Weights of various amounts are applied to the different samples to determine what weight is needed to produce the desired elongation (30%, for example) in 15 seconds. In the case of this sample, the weight is promptly removed at the end of the 15 seconds, and the length of the tape between clamps is measured at different time intervals to determine the retraction. The weight of the lower clamp is relatively so minute that it does not affect the result.

The preferred thickness of the backing film for the electrical tape is 4 to 20 mils. A thickness of about 5 to 10 mils is generally most useful.

The values of caliper, stretchability, flexibility, elasticity, adhesion, electrical properties, chemical stability or inertness, solubility, and other properties of the insulating tapes are designed and selected for greatest utility in the wrapping and protecting of splices in synthetic polymer insulated copper wire, as previously indicated. Some or all of these properties render the product useful for other purposes. For example, the adhesive tape may be used to bind together a number of insulated electrical conductors into a permanently compact, flexible, oil-resistant bundle or harness, by spirally winding such a bundle with a single overlapping strip of the tape applied under considerable tension. A similar spiral winding on metal racks employed in electroplating operations provides a chemically resistant coating which remains firmly attached to the rack during immersion in the plating bath. Single thicknesses of the tape are useful as abrasion or wear-resistant adherent surface coatings on flat or curved surfaces.

The following examples of insulating tapes in the form of pressure-sensitive adhesive tapes having a vinyl polymer film base were prepared with a vinyl chloride-vinyl acetate copolymer softening at about 280° F. and in which the ratio of vinyl chloride to vinyl acetate was approximately 89:11. The commercially available "Vinylite VYNS," sold by Carbide and Carbon Chemical Corp., is a suitable copolymer corresponding to this description. Other equivalent materials include copolymers having other vinyl chloride-vinyl acetate monomer ratios, such as 95:5. Polyvinyl chloride itself is satisfactory in many formulations, as are many of the copolymers of vinyl chloride and vinylidene chloride, of which one example is "Geon 200-X-6," a vinyl chloride-vinylidene chloride copolymer having a softening temperature of about 260° F., sold by B. F. Goodrich Co. Polymers softening at 300° F. or higher are ordinarily to be preferred where extremely high heat resistance solvent resistance, and the like are essential.

Many liquid plasticizers other than the dioctyl phthalate of the various examples may be substituted therefor. The plasticizer must be compatible with the vinyl polymer, and must be sufficiently low in volatility so that it is not driven off during milling and calendaring, or during subsequent storage and use. Tricresyl phosphate, dibutyl phthalates, and butyl phthalyl

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butyl glycolate, for example, appear to be equally effective in most of the compositions herein described. All of these compounds are capable of producing pastiness in water-insoluble pressure-sensitive adhesives coated on vinyl backings when used in proportions greater than about 20 parts per 100 parts of the vinyl polymer.

Likewise, various compatible non-migrating resinous or high molecular weight modifying materials having a plasticizing effect on the vinyl polymer employed may be substituted in whole or in part for the specific alkyl resin hereinbefore mentioned. Ethyl acrylate polymer has been found useful, as previously noted; this modifier has somewhat less tendency to cause tack loss than does the "Paraplex G-25," hence may be used in even greater amounts in many formulations. A resinous material having properties essentially equivalent to Paraplex G-25 for our purposes has been prepared by heating together sebacic acid, propylene glycol, and ethylene glycol in a 10:9:1 molar ratio to a low acid number.

It will be understood that, where specific ratios of specific polymers, low molecular weight plasticizers, and high molecular weight plasticizers are described in the examples, substitution of equivalent but somewhat different materials may require alteration of these ratios in order to obtain equivalent results, all in conformity with well-recognized principles.

Various modifying agents which impart specific properties to the film may be added if desired. For example, a small amount of calcium stearate added prior to milling and calendering acts as a stabilizer in preventing darkening of the vinyl polymer or of the film. Other examples are lead silicate, calcium silicate, and triethanolamine.

In general, the tape products herein described are most conveniently and economically prepared by a series of steps including pre-mixing, milling, and calendering the vinyl polymer-plasticizer mixture into continuous film form, temporarily attaching the film to a carrier belt or web, coating the exposed surface of the film with an adhesive primer and subsequently with a pressure-sensitive adhesive, removing the coated film from the carrier, slitting into narrow widths, and winding the resulting adhesive tape into roll form on suitable cores. In place of calendering, other means may be employed for forming the film. Deposition from solution in a suitable volatile liquid vehicle, followed by heating to remove the vehicle and, where necessary, to homogenize the film, has some advantages, particularly in the case of the thinner films. However, the action of the calender or similar devices seems to impart some additional and desirable properties to the resulting film, particularly with respect to stretchiness and elasticity, and such methods are generally to be preferred.

Where a varnished cambric or Holland cloth carrier belt is used, sufficient adhesion of film to belt may be obtained simply by combining the two on the bottom roll of the calender under a light pressure and with the roll at a temperature of the order of 110° F. A heavy paper web with a light weight surface coating of a low tack pressure-sensitive adhesive may economically replace the varnished cambric. In any event, the carrier web is simply an aid to the successful commercial coating of the highly stretchable film, and may be dispensed with where other suitable methods of handling this type of material are available.

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Primer and adhesive compositions are preferably, but not necessarily, applied from solution or suspension in a volatile liquid vehicle, as shown in the examples. The volatile vehicle is removed after each coating operation, preferably by evaporation at elevated temperatures.

Example 1

A mixture of 700 parts by weight of "Vinylite VYNS," 200 parts of "Paraplex G-25," 100 parts of dioctyl phthalate and 25 parts calcium stearate was milled together on a rubber mill, previously heated to 250° F., until homogeneous, and was then calendered to a thickness of 4 mils. The resulting transparent film was lightly bonded to a varnished cambric carrier web, and was then primed, after which it was coated with a pressure-sensitive adhesive. The primer was made by mixing 885 lbs. of an ammoniacal casein solution containing 80 lbs. of casein with 624 lbs. of an aqueous dispersion containing 38% by weight of a copolymer of 50 parts butadiene and 50 parts styrene. The primer coating was dried to remove the water, resulting in an extremely thin primer film. The formula of the pressure-sensitive adhesive was as follows:

	Parts by weight
Rubbery butadiene-styrene copolymer	100
Zinc oxide	5
Titanium dioxide	10
Yellow pigment	0.3
Oil-soluble heat-reactive phenol-aldehyde resin	12
Ester gum	40
Paraffin oil	25
Soft coumarone-indene resin	40
Heptane	300
Alcohol	about 10

In compounding the adhesive, the copolymer and pigments were first milled together. The mill base was then blended with the ester gum, paraffin oil, coumarone-indene resin, and finally with the phenol-aldehyde resin in a heated heavy duty internal mixer. After a brief further heating at a higher temperature, the batch was cooled. The heptane was then added in small portions, and sufficient alcohol was finally added to bring the viscosity to the proper value for coating. The primed film was coated with the adhesive solution, followed by drying to remove the solvent. About 6.5 to 7.5 grains of adhesive, on the dry basis, were applied to 24 square inches of the film.

The coated film was removed from the temporary liner and slit into narrow widths. The resulting tape was highly stretchable and elastic; and provided an excellent insulating and protecting covering when wound around an electrical conductor. On an irregular surface, such as a wire splice, the elasticity or regain was sufficient to provide an extremely compact covering. The tape was found to have at least about 100% stretch, and a tensile strength of about 20 lbs. per inch width.

Strips of the tape were stretched to 20% and to 50% elongation, and were then allowed to retract under no load. The strips returned to their initial length in 15 to 30 minutes and in 12 hours, respectively.

An adhesive tape was similarly prepared from a film in which the same polymer, resinous plasticizer, and liquid plasticizer were in the relative proportion of 100:20.5:17.6. This film was somewhat softer and more readily stretchable. How-

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ever the adhesive coating was in permanent equilibrium with the backing, as shown by the fact that after one year of natural ageing at room temperature the adhesion and firmness values of the pressure-sensitive adhesive coating remained unchanged.

Increasing the plasticizers in the above film to a final formula of 100:30:20 yielded a composition which, in the form of 4 mil film, was found to be somewhat weak. However, this composition produced a reasonably satisfactory backing in thicknesses of about twelve mils. Pressure-sensitive adhesives coated on this backing were found to soften to a very slight extent after prolonged ageing in the final tape rolls, but the tape remained fully satisfactory for such uses as the binding of wire harnesses and the like.

On the other hand, films prepared from the above ingredients in the proportions 100:26.5:6.7, primed, and coated with adhesive, were found to be too tough and inelastic for most uses, even though the adhesive coating remained tacky and in good condition. When such films were elongated to more than approximately ten or twenty per cent of their initial length, they were found to acquire a permanent set and would not then retract to their original length. A slight increase in the proportion of dioctyl phthalate, for example, to about eight or ten parts, improved the films in this respect. On the other hand, adhesives coated on films plasticized with from 40 to 70 parts of "Paraplex G-25" and in the absence of the dioctyl phthalate were soon found to become deficient in tackiness.

Example 2

The plasticized vinyl polymer film of Example 1 was primed with a synthetic rubber-resin primer composition applied from solution in organic solvent, and coated with a natural rubber base pressure-sensitive adhesive. The resulting transparent pressure-sensitive adhesive tape was useful for wrapping splices in electrical conductors and for other purposes. The adhesive and backing were found to be in permanent equilibrium. The transparent nature of the tape was advantageous where it was desirable periodically to inspect the protected surface.

The composition used as the primer in this example consisted of a solution, in a mixture of 100 parts toluol and 20 parts methyl ethyl ketone, of 20 parts of a pure hydrocarbon thermoplastic terpene resin having a melting point of 115° F. and a zero acid number, and 25 parts of a rubbery butadiene-acrylonitrile copolymer.

The transparent pressure-sensitive adhesive was prepared by blending 288 lbs. of latex crepe rubber, 175 lbs. of the thermoplastic terpene resin having a melting point of 115° F., 2.88 lbs. of tetramethyl thiuram disulfide, and 3 lbs. of an antioxidant such as "Flectol H" (a condensation product of acetone and aniline melting at 120° C.), in solution in heptane containing a small amount of denatured alcohol as a viscosity reducing agent.

Example 3

Various pigments and colors may be added both to the backing and to the adhesive formulation of my insulating composition in order to improve the appearance, or to provide a distinctive color, or for other purposes. Heavy pigment loading of the vinyl film for example is found to improve the heat resistance.

A film twelve mils in thickness was prepared from a mixture of 700 parts "Vinylite VYNS,"

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200 parts "Paraplex G-25," 100 parts dioctyl phthalate, 1100 parts titanium dioxide pigment, and 30 parts calcium stearate, together with 100 parts of a mold inhibiting agent such as "Shirlan Extra" (sallyl anilide). The film was primed with the primer of Example 2 and coated with a polyacrylate base pressure-sensitive adhesive. The adhesive was composed of a copolymer of 75 parts of 2-ethylbutyl acrylate and 25 parts ethyl acrylate, tackified with a thermoplastic terpene resin, and firmed up by heating with small admixed amounts of zinc resinate and an oil soluble heat-reactive phenol-formaldehyde resin. Titanium dioxide was included as a pigment to produce a white adhesive. The produce was cut into narrow widths and wound into roll form, in this case with a varnished cambric interliner.

Samples of the tape showed approximately 100% strength at break, and had a tensile strength at break of approximately 30 lbs. per inch width. Retraction to original length from 20% elongation was complete in somewhat under five minutes, and from 50% elongation in approximately twenty-four hours.

Example 4

To produce a completely flame-resistant tape product, the primed film of Example 3 was coated with a pressure-sensitive adhesive consisting essentially of polymerized chloroprene and chlorinated diphenyl in approximately equal proportions by weight. The adhesive was applied from solution in a high aromatic content hydrocarbon solvent.

Example 5

To the film composition of Example 1 was added five parts of carbon black. The resulting film had a black glossy appearance and considerably increased tensile strength. The elasticity was somewhat reduced, but the film retracted to its original dimension from approximately 50% elongation in somewhat less than twenty-four hours.

The film was primed with the primer of Example 2 and coated with an adhesive consisting of 100 parts of a mixture of equal parts of natural rubber and Buna-S synthetic rubber, 50 parts of zinc oxide, 5 parts of carbon black, and 50 parts of heat treated wood rosin. A small amount of Flectol H antioxidant was also added, and the material was dispersed in heptane to a coatable viscosity. The resulting tape product was particularly applicable to the covering of splices in copper wires carrying an insulating coating of black pigmented plasticized synthetic polymer.

Having described various embodiments of our invention, for purposes of illustration rather than limitation, what we claim is as follows:

1. A pressure-sensitive adhesive insulating tape wound upon itself in roll form and comprised of: a stretchable and elastic film backing having a thickness of 4 to 20 mils and formed of a homogeneous mixture primarily consisting of a stable blend of a film-forming polymer of monomers including at least a major proportion of vinyl chloride, a substantially non-volatile liquid phthalyl ester plasticizer amounting to 8 to 20 parts per 100 parts of said polymer, and a soft and viscous low-acid-number alkyd plasticizer resin in amount at least equal to the amount of said liquid phthalyl ester plasticizer, the total amount of said plasticizers being about $\frac{1}{2}$ to $\frac{1}{2}$ the amount of said polymer and the proportions being such that the adhesive tape has the properties of stretch and elasticity hereafter

2,559,980

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specified without causing pastiness or tack-loss of the contacting adhesive in the roll; and a eucohesive normally tacky and pressure-sensitive rubber-resin type adhesive coating united to the inner face of said film backing; said adhesive tape being unwindable without delamination or offsetting of adhesive, being originally stretchable by hand-pulling to an extent of at least 50% at room temperature and being substantially completely retractable from an elongation of 30% as herein specified.

2. An adhesive tape according to claim 1, wherein the adhesive includes a small proportion of an oil-soluble heat-reactive phenol-aldehyde resin.

3. An adhesive tape according to claim 1 in which the film forming polymer is a copolymer of vinyl chloride and a minor proportion of vinyl acetate, said copolymer having a softening temperature of at least about 280° C.

4. A pressure-sensitive adhesive insulating tape wound upon itself in roll form and comprised of: (1) a stretchable and elastic film backing having a thickness of 4 to 10 mills and formed of a homogeneous mixture primarily consisting of a stable blend of 70 parts of a copolymer of vinyl chloride and a minor proportion of vinyl acetate, about 10 parts of a substantially non-volatile liquid phthalyl ester plasticizer, and about 20 parts of a soft and viscous low-acid-number alkyd plasticizer resin; (2) an adhesive primer coating on the inside face of the film backing adapted to

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increase the anchorage of the adhesive coating; and (3) a eucohesive normally tacky and pressure-sensitive rubber-resin type adhesive coating bonded to said primer coating; said adhesive tape being unwindable without delamination or offsetting of adhesive, being originally stretchable to an extent of at least 100% at room temperature and being substantially completely retractable from an elongation of 30% as herein specified.

5. An adhesive tape according to claim 4, wherein the adhesive includes a small proportion of an oil-soluble heat-reactive phenol-aldehyde resin.

RALPH J. OACE.
ROBERT BURNS SNELL.
ESTHER E. EASTWOLD.

REFERENCES CITED

The following references are of record in the file of this patent:

UNITED STATES PATENTS

Number	Name	Date.
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2,010,963	Robertson	Aug. 13, 1935
2,059,055	Studt	Oct. 27, 1936
2,170,949	Morgan	Aug. 29, 1939
2,322,903	Wilkoff	June 29, 1943
2,340,413	Hemperly	May 23, 1944
2,385,319	Eustis	Sept. 18, 1945
2,451,182	Taft	Oct. 12, 1948

Electronic Patent Application Fee Transmittal

Application Number:	10674108			
Filing Date:	29-Sep-2003			
Title of Invention:	ADHESIVE TAPE			
First Named Inventor/Applicant Name:	Thomas R. Goecke			
Filer:	Walter Scott Harders/Christina Correll			
Attorney Docket Number:	29006-2			
Filed as Small Entity				
Utility Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Filing a brief in support of an appeal	2402	1	250	250
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				250

Electronic Acknowledgement Receipt

EFS ID:	1604748
Application Number:	10674108
International Application Number:	
Confirmation Number:	2438
Title of Invention:	ADHESIVE TAPE
First Named Inventor/Applicant Name:	Thomas R. Goecke
Customer Number:	21130
Filer:	Walter Scott Harders/Christina Correll
Filer Authorized By:	Walter Scott Harders
Attorney Docket Number:	29006-2
Receipt Date:	19-MAR-2007
Filing Date:	29-SEP-2003
Time Stamp:	17:49:44
Application Type:	Utility

Payment information:

Submitted with Payment	yes
Payment was successfully received in RAM	\$250
RAM confirmation Number	994
Deposit Account	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
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1	Appeal Brief Filed	GoeckeAppealBrief.pdf	3906121	no	79
Warnings:					
Information:					
2	Fee Worksheet (PTO-06)	fee-info.pdf	8132	no	2
Warnings:					
Information:					
Total Files Size (in bytes):			3914253		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	29006-2	2438

21130 7590 05/04/2007

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EXAMINER

ART UNIT

PAPER NUMBER

DATE MAILED: 05/04/2007

Please find below and/or attached an Office communication concerning this application or proceeding.

**Notification of Non-Compliant Appeal Brief
(37 CFR 41.37)**

Application No.

10/674,108

Applicant(s)

GOECKE, THOMAS R.

Examiner

Nasser Amhad

Art Unit

1772

--The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

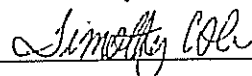
The Appeal Brief filed on 19 March 2007 is defective for failure to comply with one or more provisions of 37 CFR 41.37.

To avoid dismissal of the appeal, applicant must file an amended brief or other appropriate correction (see MPEP 1205.03) within **ONE MONTH or THIRTY DAYS** from the mailing date of this Notification, whichever is longer.
EXTENSIONS OF THIS TIME PERIOD MAY BE GRANTED UNDER 37 CFR 1.136.

1. ☐ The brief does not contain the items required under 37 CFR 41.37(c), or the items are not under the proper heading or in the proper order.
2. ☐ The brief does not contain a statement of the status of all claims, (e.g., rejected, allowed, withdrawn, objected to, canceled), or does not identify the appealed claims (37 CFR 41.37(c)(1)(iii)).
3. ☐ At least one amendment has been filed subsequent to the final rejection, and the brief does not contain a statement of the status of each such amendment (37 CFR 41.37(c)(1)(iv)).
4. ☒ (a) The brief does not contain a concise explanation of the subject matter defined in each of the independent claims involved in the appeal, referring to the specification by page and line number and to the drawings, if any, by reference characters; and/or (b) the brief fails to: (1) identify, for each independent claim involved in the appeal and for each dependent claim argued separately, every means plus function and step plus function under 35 U.S.C. 112, sixth paragraph, and/or (2) set forth the structure, material, or acts described in the specification as corresponding to each claimed function with reference to the specification by page and line number, and to the drawings, if any, by reference characters (37 CFR 41.37(c)(1)(v)).
5. ☐ The brief does not contain a concise statement of each ground of rejection presented for review (37 CFR 41.37(c)(1)(vi)).
6. ☐ The brief does not present an argument under a separate heading for each ground of rejection on appeal (37 CFR 41.37(c)(1)(vii)).
7. ☐ The brief does not contain a correct copy of the appealed claims as an appendix thereto (37 CFR 41.37(c)(1)(viii)).
8. ☐ The brief does not contain copies of the evidence submitted under 37 CFR 1.130, 1.131, or 1.132 or of any other evidence entered by the examiner and **relied upon by appellant in the appeal**, along with a statement setting forth where in the record that evidence was entered by the examiner, as an appendix thereto (37 CFR 41.37(c)(1)(ix)).
9. ☐ The brief does not contain copies of the decisions rendered by a court or the Board in the proceeding identified in the Related Appeals and Interferences section of the brief as an appendix thereto (37 CFR 41.37(c)(1)(x)).
10. ☒ Other (including any explanation in support of the above items):

1.) The summary of claimed subject matter does map the invention to the specification page and line number. However it fails to identify each independent claim (1, 11 and 12) involved in the appeal.

TIM COLE
PATENT APPEAL CENTER SPECIALIST
Timothy Cole



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of	: THOMAS R. GOECKE	Examiner	: NASSER AHMAD
Application No.	: 10/674,108	Group Art Unit	: 1772
Filing Date	: SEPTEMBER 29, 2003	Confirmation No.:	2428
Title	: ADHESIVE TAPE	Docket No.	: 29006-2 (new)

Mail Stop Appeal Brief - Patents
Board of Patent Appeals and Interferences
United States Patent and Trademark Office
P.O. Box 1450
Alexandria, VA 22313-1450

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Dear Sir or Madam:

The following Response to Notification of Non-Compliant Appeal Brief is submitted in response to the May 4, 2007, Notification of Non-Compliant Appeal Brief ("Notification"). In compliance with 37 C.F.R. 41.37(c)(1)(v) and M.P.E.P. §1205.03, Applicant has submitted the following amended summary of claimed subject matter. This response is filed with a request for a one month extension of time and appropriate fee.

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Serial No. 10/674,108; Filed: 09/23/03

Docket No.: 29006-2 (new)

V. SUMMARY OF CLAIMED SUBJECT MATTER

The claimed subject matter includes, with respect to independent claim 1, an adhesive tape comprising a polymer layer with a Shore A Hardness of between about 92 and 100 and a substantially uniform thickness of between about 0.020" to 0.065." A layer of adhesive is attached to the polymer layer. See page 2, lines 9-22; page 3, lines 22-24; page 4, lines 1-2; Fig. 1.

With regard to independent claim 11, the claimed subject matter includes an adhesive tape comprising a polymer layer with a Shore A Hardness of between about 92 and 100 and of an average thickness of between 65 mil and 69 mil, and a layer of pressure sensitive adhesive comprising a first side and an opposed second side, the first side being in direct and uninterrupted contact with the polymer layer. See page 2, lines 2-22; page 3, lines 22-24; page 4, lines 1-2; page 5, lines 33-34; Fig. 1.

With regard to independent claim 12, the claimed subject matter includes an adhesive tape comprising a polymer layer defining a first side and having a thickness between 0.020" and 0.065", and a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer and an opposing side of the double sided adhesive layer is disposed to adhere to a flooring environment. The adhesive tape has a peel adhesion greater than 2.0 lb/in width. See page 2, lines 2-22; page 4, line 1; page 6, line 23; Fig. 1.

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Serial No. 10/674,108; Filed: 09/23/03

Docket No.: 29006-2 (new)

CONCLUSION

The Commissioner is hereby authorized to charge any additional fees, or credit any overpayment to Deposit Account No. 02-2051, referencing Attorney Docket No. 29006-2.

Respectfully submitted

Dated: June 15, 2007

By:



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Electronic Patent Application Fee Transmittal

Application Number:	10674108			
Filing Date:	29-Sep-2003			
Title of Invention:	ADHESIVE TAPE			
First Named Inventor/Applicant Name:	Thomas R. Goecke			
Filer:	Walter Scott Harders/Nancy Grams			
Attorney Docket Number:	29006-2			
Filed as Small Entity				
Utility Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 1 month with \$0 paid	2251	1	60	60

Description	Fee Code	Quantity	Amount	Subtotal in USD(\$)
Miscellaneous:				
Total in USD (\$)				60

Electronic Acknowledgement Receipt

EFS ID:	1876911
Application Number:	10674108
International Application Number:	
Confirmation Number:	2438
Title of Invention:	ADHESIVE TAPE
First Named Inventor/Applicant Name:	Thomas R. Goecke
Customer Number:	21130
Filer:	Walter Scott Harders/Nancy Grams
Filer Authorized By:	Walter Scott Harders
Attorney Docket Number:	29006-2
Receipt Date:	15-JUN-2007
Filing Date:	29-SEP-2003
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Application Type:	Utility

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RAM confirmation Number	5712
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Document Number	Document Description	File Name	File Size(Bytes)	Multi Part /.zip	Pages (if appl.)
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1

Appeal Brief Filed

25006-2 Resp2 Non-Comp Ap
Br.pdf

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3

Warnings:

Information:

2

Fee Worksheet (PTO-06)

fee-info.pdf

8125

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If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	29006-2	2438

21130 7590 09/18/2007
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EXAMINER

AHMAD, NASSER

ART UNIT PAPER NUMBER

1772

MAIL DATE DELIVERY MODE

09/18/2007

PAPER

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The time period for reply, if any, is set in the attached communication.



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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/674,108
Filing Date: September 29, 2003
Appellant(s): GOECKE, THOMAS R.

MAILED
SEP 18 2007
GROUP 1700

W. Scott Harders
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 3/19/2007 and 6/15/2007 appealing from the Office action mailed 10/19/2006.

Application/Control Number: 10/674,108
Art Unit: 1772

Page 2

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

However, it should be noted that rejection (B) therein should correctly read as: claims 7, 10 and 11 are unpatentable under 35 USC 103(a) as being obvious over Oace in view of Hughart and Guenther (see the Office Action of 10/19/2006, paragraph-9). The reference to Maurer in the body of the rejection was an inadvertent error by the examiner. Said error has been corrected in the rejections presented hereinbelow.

Application/Control Number: 10/674,108
Art Unit: 1772

Page 3

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

2,559,990	OACE	07-1951
6,668,504	HUGHART	12-2003
6,461,715	GUENTHER	10-2002

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claims 1- 6, 9-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oace (2559990) in view of Hughart (6668501).

Oace relates to an adhesive tape comprising a polymer backing film of 4 to 20 mils thickness (col. 4, lines 21-22) and an adhesive layer contacting the backing film (col. 5, lines 44-47). The backing can be polyvinyl chloride (col. 4, lines 43-60). However, Oace fails to expressly teach that the backing film has a Shore A Hardness of 92-100.

Hughart discloses an adhesive tape comprising a backing (36) of polymeric material such as polyvinyl chloride having Shore A Hardness of 92 and an adhesive layer attached thereto (col. 2, lines 38-45). Figures 1 and 3 shows the backing to be of substantially uniform thickness. Therefore, it would have been obvious to one having ordinary skill in the art to utilize Hughart's teaching of providing an adhesive tape backing of polyvinyl chloride having a Shore A Hardness of 92 in the invention of Oace with the motivation to provide for hardness imparted for structural strength to the tape. For claim 2, Hughart teaches a substrate (30) is attached to the outermost side of the adhesive layer.

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Page 4

Regarding claim 3, the presence of a textured surface on the backing is inherent of the backing to be able to bond to the adhesive layer.

Claim 5 is disclosed in col. 7, lines 66-67, wherein pigments can be added to the backing layer.

For claim 6, the tape backing is of polyvinyl chloride material is well in the art to be transparent (col. 7, lines 43-44).

For claim 9, it would have been obvious optimization, based on routine experimentation, to provide the backing of Hughart to have Shore A Hardness of 93-97 for optimizing the hardness of said backing polymer layer.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oace in view of Guenther (6461715).

Oace, as discussed above fails to teach that the peel adhesion of the adhesive layer is greater than 2.0 lb/in width. Guenther relates to an adhesive tape comprising a polymer layer (11) having a thickness of 50-500 microns (col. 7, lines 19-25) and a first side of the polymer layer has a double-sided adhesive layer (12) because it has two sides of adhesive surface. As shown in figure-2, one side of the adhesive layer is in substantially continuous contact with the first side of the polymer layer. The adhesive tape can be a pressure sensitive adhesive tape, including rubber-based adhesive (col. 8, lines 36-40). The tape has a peel adhesion of at least 3.5 N/cm (col. 8, lines 10-16), which would include the claimed peel adhesion of greater than 2.0 lb/in width. Therefore, it would have been obvious to one having ordinary skill in the art to utilize guenther's teaching by providing the adhesive layer to have a peel adhesion of at least 3.5 N/cm, which Claim 5 is disclosed in col. 7, lines 66-67, wherein pigments can be added to the backing layer.

For claim 6, the tape backing is of polyvinyl chloride material is well in the art to be

Application/Control Number: 10/674,108

Page 5

Art Unit: 1772

transparent (col. 7, lines 43-44).

For claim 9, it would have been obvious optimization, based on routine experimentation, to provide the backing of Hughart to have Shore A Hardness of 93-97 for optimizing the hardness of said backing polymer layer.

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Oace in view of Guenther (6461715).

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The intended use phrases such as "for application", "to adhere", etc. have not been given any patentable weight because said phrases are not found to be of positive limitations

Claims 7,10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Oace in view of Hughart and Guenther.

Application/Control Number: 10/674,108

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Oace and Hughart, as discussed above, fails to teach that the adhesive is a rubberized double-sided tape. Guenther, also discussed above, relates to a double-sided pressure sensitive adhesive (PSA). Therefore, it would have been obvious to one having ordinary skill in the art to utilize Guenther's teaching of using a double-sided rubberized pressure sensitive adhesive tape in the invention of Oace with the motivation to provide for enhancing its peel adhesion characteristics.

(10) Response to Argument

Appellant argues, in page-5 (of Appeal Brief) that *Far from incorporating more relevant art, the Office has cited new references directed to subject matter even further from the claims than before, such as a reference directed toward sound-deadening wall board.* This is not convincing because it should be noted that instant independent claims 1 and 11 are directed to an adhesive tape, while independent claim 12 is directed to an adhesive tape for application to a flooring. Thus, the claims are directed to an adhesive tape and the applied prior art are also in the same field of endeavor, in that said prior art are also directed to adhesive tape.

Regarding the inadvertent error in the rejection which cited the Maurer reference, appellant's observation is correct in that the Maurer was mistakenly cited in the Office Action of 10/19/2006. A closer look of said rejection would also show that Maurer was not cited in the heading portion of said rejection. Please note that said rejection has been corrected to recite Oace, which has been substituted for Maurer, to overcome the confusion.

Responding to appellant's argument that the prior art are non-analogous, in page-6 of Appeal Brief, appellant is informed that the cited prior art teaches an adhesive tape

comprising a polymer layer with adhesive attached thereto, which is the structure being claimed in the instant application.

Regarding the patent statutes discussed by the appellant in the Appeal Brief, page-7, appellant is directed to explanations provided hereinabove showing that the applied arts are in the same field of endeavor as the applicant's claimed invention, i.e., the adhesive tape comprising a polymer layer having an adhesive layer attached thereto.

In response to the argument made in page-8 of the Appeal Brief, appellant is directed to the above provided explanation that applies *a fortiori* herein for the argument that Oace and Hughart are non-analogous. Further, appellant is informed that Hughart does suggest the polymer layer having a Shore Hardness of 92. Specifically, the element 36 of Hughart is interpreted to be an adhesive tape because it comprises a polymer layer having an adhesive layer affixed thereto, as claimed by the applicant in instant claim 1. Hughart was cited to show that polyvinyl chloride polymer material of an adhesive tape is known to have Shore hardness of 92 for providing strength characteristic to the polyvinyl chloride adhesive tape polymer layer in the invention of Oace. Further, appellant has failed to show otherwise.

As for the argument regarding claim 2, appellant is directed to Hughart, figure-3, and the Office Action of 10/19/2006, paragraph-7, wherein it is shown that the substrate is attached to the outermost side of the adhesive layer.

As for claim 3, the polymer layer would inherently have a textured surface because it is well known in the adhesive art to increase the adhesion between a backing layer and the adhesive thereon by making the backing surface textured, thereby increasing the surface area to enhance the adhesive adhering thereto. In the alternative, figure-3 of Hughart shows a hole in the element 36 which opens to the surface thereof, which can be taken to be a textured surface of the polymer layer.

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Page 8

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Responding to the arguments for claims 5 and 6, this is not persuasive because appellant has discussed the Shore hardness feature of the polymer layer and not the features of claims 5 and 6.

As for the argument for claim 9, appellant is directed to the Office Action, paragraph-7, wherein it has been explained that a Shore hardness of 93 is found to be obvious optimization of the Shore hardness of 92 of Hughart, in the absence of any showing by the appellant that the polymer layer will exhibit distinct characteristics at said Shore hardness numbers.

Moving onto the rejection of claim 12, appellant is directed to the Office Action of 10/19/2006, paragraph-8, wherein it has been explained that the polymer layer (11) has an adhesive layer attached thereto, that the adhesive is a double-sided adhesive layer as it has two sides that exhibit adhesive properties, and that Guenther was cited to show that the tape exhibits a peel adhesion of at least 3.5N/cm, which includes the claimed peel adhesion of 2.0lb/in.width. Again, appellant has failed to show that the cited prior art would not exhibit a peel adhesion of at least 3.5N/cm.

Additionally, applicant calculation of 500 microns=0.019685 inches (see Appeal Brief, page-11, footnote) is not found to be convincing because the prior art teaching of 500 microns=20 mils=0.02 inches because conventionally 1 mil=25 microns. Assuming *arguendo* that appellant's calculation is correct, even then there is no showing as to the distinct characteristics displayed by polymer layer at 0.020 inches (20 mils) and 0.019685 inches.

Turning to the rejection of claims 7, 10 and 11, the arguments have been explained hereinabove which apply *a fortiori* herein. Aso, Applicant's observation regarding the inadvertent error in citing Maurer, instead of Oace, is acknowledged and in the rejection in paragraph-9 in the Office Action of 10/19/2006 has been addressed hereinbefore.

Application/Control Number: 10/674,108

Page 9

Art Unit: 1772

(11) Related Proceeding(s) Appendix

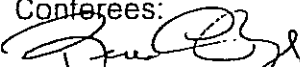
No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,


Nasser Ahmad

Conferees:


1. Rena Dye

SPE, Art Unit 1772


2. Romulo Delmendo

Appeals Specialist, TC 1700

Index of Claims



Application No.

10/674,108

Examiner

Nasser Ahmad

Applicant(s)

GOECKE, THOMAS R.

Art Unit

1772

✓	Rejected
=	Allowed

—	(Through numeral) Cancelled
÷	Restricted

N	Non-Elected
I	Interference

A	Appeal
O	Objected

Claim		Date					
Final	Original	3/16/05	10/13/05	3/19/06	10/16/06	9/13/07	
	1	✓	✓	✓	✓	A	
	2	✓	✓	✓	✓	A	
	3	✓	✓	✓	✓	A	
	4	✓	✓	✓	✓	A	
	5	✓	✓	✓	✓	A	
	6	✓	✓	✓	✓	A	
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	8	✓					
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Search Notes



Application No.

10/674,108

Examiner

Nasser Ahmad

Applicant's

GOECKE, THOMAS R.

Art Unit

1772

SEARCHED

Class	Subclass	Date	Examiner
428	40.1,40.6	3/15/2005	NA
	41.3,41.6		
	42.1,207		
	343,354		
	217,908.8		
above	UPDATED	10/13/2005	NA
above	UPDATED	3/18/2006	NA
above	UPDATED	10/16/2006	NA

INTERFERENCE SEARCHED

Class	Subclass	Date	Examiner

SEARCH NOTES
(INCLUDING SEARCH STRATEGY)

	DATE	EXMR
WEST and Inventor's Search	3/15/2005	NA
WEST and Inventor's search	10/13/2005	NA
WEST (text search)	3/18/2006	NA
WEST (Text search)	10/16/2006	NA
Appeal Conference with Rena Dye and Romulo Delmendo	9/13/2007	NA



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	29006-2	2438

21130 7590 02/19/2009
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EXAMINER

DYE, RENA

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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02/19/2009

PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS R. GOECKE

Appeal 2008-4501
Application 10/674,108
Technology Center 1700

Decided:¹ February 19, 2009

Before CATHERINE Q. TIMM, LINDA M. GAUDETTE, and
KAREN M. HASTINGS, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-7 and 9-12, the only claims pending in the Application. (Appeal Brief, filed March 19, 2007, (“Br.”) 4 § III.) We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

Appeal 2008-4501

Application 10/674,108

Claim 1 is illustrative of the invention and is reproduced below:

1. An adhesive tape comprising:

a polymer layer having a Shore A Hardness of between about 92 and 100 and a substantially uniform thickness of between about 0.020" to 0.065"; and

a layer of adhesive attached to said polymer layer.

The Examiner relies on the following prior art references to show unpatentability (Examiner's Answer, mailed September 18, 2007, ("Ans.") 3 § (8)):

Oace	US 2,559,990	Jul. 10, 1951
Guenther	US 6,461,751 B1	Oct. 8, 2002
Hughart	US 6,668,504 B2	Dec. 30, 2003

Appellant requests review of the following grounds of rejection (Br. 5 § VI.):

1. claims 1-6 and 9-10 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Hughart;

2. claim 12 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Guenther; and

3. claims 7, 10, and 11 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Hughart and Guenther (*see* Ans. 2, § (5) (correcting Appellant's statement of the grounds of rejection)).

ISSUE

Has Appellant shown that the Examiner reversibly erred in determining that it would have been obvious to one of ordinary skill in the

art at the time of the invention to have combined the applied prior art in the manner claimed?

We answer this question in the negative as to each ground of rejection for essentially the reasons stated in the Examiner's Answer, which we explain in further detail below.

FINDINGS OF FACT

1. The present invention relates to an adhesive tape which is said to have superior ductility, strength, tear resistance, and abrasion resistance. (Spec. 1:7-8.) The tape is for use, for example, as floor marking in industrial and factory environments. (Spec. 1:10-11.) According to the Specification, a disadvantage of prior art tapes is that they "lack[] sufficient strength and hardness to prevent wearing, tearing, cracking and breakage from heavy and repeated traffic." (Spec. 1:11-13.) Another disadvantage is that they have poor adhesive quality, and tend to detach from repeated traffic (e.g., forklift trucks). (Spec. 1:14-15.)
2. Oace claims "[a] pressure-sensitive adhesive insulating tape . . . comprised of: a stretchable and elastic film backing having a thickness of 4 to 20 mils and formed of a homogeneous mixture primarily consisting of a stable blend of a film-forming polymer of monomers including at least a major proportion of vinyl chloride. . . ; and a . . . pressure-sensitive rubber-resin type adhesive coating united to the inner face of said film backing." (Oace, claim 1.)
3. Hughart discloses the use of elastomeric strips for fastening a wall panel to wall studs, thereby providing a sound-deadened wall. (*See*

Hughart, claim 1.) The elastomeric strips may be made “of an elastomeric polymer, such as polyvinyl chloride having a hardness of Durometer 92 Shore A.” (Hughart, col. 2, ll. 42-43.) According to Hughart, “[a]ny suitable adhesive” may be used to adhere the elastomeric strips to the wall panels. (Hughart, col. 2, ll. 43-45.)

4. Guenther discloses a closure tape for an absorbent article comprising an essentially non-elastic backing material (Abstract) having a thickness of 50-500 μm and made from a polymer material such as polyvinyl chloride (col. 7, ll. 19-25). According to Guenther, the backing material bears an adhesive layer (col. 7, l. 27) which is preferably a pressure-sensitive adhesive, such as a rubber based adhesive (col. 8, ll. 37-38), exhibiting a 90° peel adhesion from a polyethylene surface of at least 3.5 N/cm (col. 8, ll. 11-16). The pressure-sensitive adhesive preferably exhibits a high value of static shear so that the tape does not inadvertently loosen. (See Guenther, col. 8, ll. 22-29.) The thickness of the adhesive layer is preferably between 20 and 100 μm . (Guenther, col. 8, ll. 50-52 and 63-65; col. 9, l. 66-col. 10, l. 1.)
5. Guenther discloses that “the adhesion behavior of the adhesive . . . with respect to the target area [] is governed both by the nature of the adhesive and the surface properties of the target area” (col. 10, ll. 25-28). According to Guenther, “[w]hen using an appropriate release surface . . . it is often possible to use aggressive pressure-sensitive adhesives. . . . Alternatively, the pressure-sensitive adhesive . . . may be partially detackified to render it less aggressive and removable from the target area” (col. 10, ll. 36-43).

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Rejection of claims 1-6 and 9-10 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Hughart:

6. The Examiner relies on Oace for a disclosure of the invention as claimed in independent claim 1, with the exception of an express teaching that the backing film has a Shore A Hardness of 92-100.

The Examiner contends that

it would have been obvious to one having ordinary skill in the art to utilize Hughart's teaching of providing an adhesive tape backing of polyvinyl chloride having a Shore A Hardness of 92 in the invention of Oace with the motivation to provide for hardness imparted for structural strength to the tape.

(Ans. 3.)

7. Appellant does not dispute that Hughart discloses a polymer layer having the Shore A hardness recited in claim 1. (See Br. 8-9.) Nor does Appellant dispute the Examiner's contention that it would have been a matter of routine optimization to achieve a Shore A Hardness of 93-97, as recited in dependent claim 9 (Ans. 4). (See App. Br. 10.) However, Appellant argues that "as a whole, Hughart does not fairly suggest a polymer layer having the Shore A Hardness limitation missing from Oace" (Br. 8; *see also*, Br. 10 (relying on the same arguments in traversing the rejections of claims 5, 6, and 9)), because Hughart's elastomeric strips are "not an adhesive tape but instead a 'spacer' that is adapted to provide air gaps between the studs and the wall panel" (Br. 9). Appellants further argue that Hughart's elastomeric strips "appear to be about the thickness of the wall board"

which is an order of magnitude greater than Appellants' claimed thickness. (Br. 9.)

8. With respect to dependent claim 2, Appellant concedes that Hughart discloses attaching the outermost side of the elastomeric strips to a wall panel. (App. Br. 9.) Appellant disputes the Examiner's contention that the "substrate" of appealed claim 2 reads on Hughart's wall panel (Ans. 3). (App. Br. 9.)
9. With respect to dependent claim 3, the Examiner finds that, in order to bond to the adhesive layer, Oace's backing would inherently possess the claim 3 "textured surface." (Ans. 4.) The Examiner also finds that Hughart's elastomeric strips include holes which provide a textured surface as claimed. (Ans. 7.) Appellant argues that "[t]here is no teaching of a 'textured surface' in either Oace or Hughart." (Br. 9.)

Rejection of claim 12 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Guenther and rejection of claims 7, 10, and 11 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Hughart and Guenther:

10. The Examiner maintains that Oace, as modified by Hughart, discloses the invention as claimed in independent claim 11 with the exception that the adhesive is a rubberized double-sided tape. (Ans. 6.) The Examiner contends that "it would have been obvious to one having ordinary skill in the art to utilize Guenther's teaching of using a double-sided rubberized pressure sensitive adhesive tape in the invention of Oace with the motivation to provide for enhancing its peel adhesion characteristics." (Ans. 6.)

11. The Examiner relies on Oace for a disclosure of the invention as claimed in independent claim 12, with the exception of an express teaching that the adhesive layer has a peel adhesion of greater than 2.0 lb/in width. (Ans. 5.) The Examiner contends that one of ordinary skill in the art would have been motivated to provide Oace's adhesive layer with a peel adhesion of at least 3.5 N/cm (which includes Appellant's claimed range) based on the advantages disclosed by Guenther.
12. Appellant does not refute the Examiner's findings with respect to the teachings of Guenther. (*See* Br. 10-12.) Rather, Appellant contends that the Examiner's proposed motivation for combining the applied prior art is based on improper hindsight reasoning. (Br. 10 and 11.) Appellant points out that Guenther's backing layer is non-elastic and rendered stretchable by incisions (or slits). (Br. 10.) Appellant contends that use of this layer in Oace's tape "would seriously undermine" the desired elastic and insulating properties of Oace's tape. (Br. 11.)
13. Appellant further argues that the thickness of Guenther's polymer layer, which Appellant calculates as a maximum of "0.019685 inches" (Br. 11 n.1), is less than the range of "between 0.020 and 0.065" required by claims 7, 10, and 12 (Br. 11-12).

PRINCIPLES OF LAW

In making a patentability determination, analysis must begin with the question, "what is the invention claimed?" since "[c]laim interpretation, . . . will normally control the remainder of the decisional process." *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567-68 (Fed. Cir. 1987); *see*

also, *In re Self*, 671 F.2d 1344, 1348 (CCPA 1982) (“Many of appellant's arguments fail from the outset because, . . . they are not based on limitations appearing in the claims.”).

During examination, claims terms “must be given their broadest reasonable construction consistent with the specification.” *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007).

Two factors are considered in determining whether prior art is analogous: “(1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor's endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Clay*, 966 F.2d 656, 658-59 (Fed. Cir. 1992) (citations omitted).

“Whether a reference in the prior art is ‘analogous’ is a fact question.” *Id.* at 658. A reference is considered analogous art if “even though it may be in a different field from that of the inventor's endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor's attention in considering his problem.” *Id.* at 659; *see also, KSR Int'l Co. v. Teleflex Inc.*, 550 U.S. 398, ----, 127 S. Ct. 1727, 1742 (2007) (“[F]amiliar items may have obvious uses beyond their primary purposes.”); *In re Paulsen*, 30 F.3d 1475, 1481-82 (Fed. Cir. 1994) (determining that housings, hinges, latches, and springs found in items like a piano lid and kitchen cabinet were reasonably pertinent to the development of a latch system for personal computers); *Icon*, 496 F.3d at 1379-80 (determining that springs used in a folding bed were reasonably pertinent to an inventor developing a treadmill with a folding mechanism).

When “the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product.” *In re Best*, 562 F.2d 1252, 1255-56 (CCPA 1977); *see also In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990) (“[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.”).

ANALYSIS

Appellant first argues that Oace and Hughart are non-analogous art because they relate to insulation and protection of electrical conductors and to spacers separating wall boards from underlying wood studs. (Br. 8.) Contrary to Appellant’s contention, we find that the Examiner properly applied these references in rejecting the appealed claims since they are “reasonably pertinent to the particular problem with which the inventor is involved,” *Clay, supra*. In particular, both references are concerned with maintaining adherence of a tape to a substrate under conditions in which the tape may be subjected to forces or environmental conditions which reduce the adhesive properties of a pressure sensitive adhesive.

With respect to Appellant’s remaining arguments, we are not persuaded of reversible error on the part of the Examiner because Appellant (1) has not addressed the facts and reasons relied on by the Examiner in rejecting the claims and (2) relies on unclaimed features to distinguish over the applied prior art.

With respect to Appellant’s failure to address the Examiner’s contentions, we note that Appellant’s arguments focus on the differences

between the claimed polymer layer and either Hughart's or Guenther's backing materials. For example, Appellant contends that substitution of Hughart's backing material for Oace's backing would not result in a polymer layer having the claimed thickness. However, the Examiner's rejections are not based on a determination that it would have been obvious to have substituted Oace's backing with Hughart's or Guenther's backing materials per se. Rather, the Examiner's rejection is based on a determination that it would have been obvious to have *modified* Oace's backing in view of Hughart or Guenther. Because Appellant did not address the Examiner's rationale for rejecting the claims, Appellant has not shown that the Examiner reversibly erred.

With respect to claim 3, we note that Oace's disclosure of a polymeric backing having an adhesive secured thereto, the same structural elements claimed by Appellant, gave the Examiner reason to believe that Oace's backing would inherently possess a textured surface as claimed in appealed claim 3. Appellant thus had the burden to establish the contrary, but did not provide evidence to refute the Examiner's finding.

Appellant also argues that several inventive features are not disclosed or suggested by the Examiner's proposed combination of references. However, Appellant has not identified reversible error in the Examiner's determination that the claims, as drafted, do not recite these argued features. For example, Appellant has not identified any language in the Specification or claims which warrants a narrow interpretation of the claim 2 term "substrate" as excluding Hughart's wall board.

Appeal 2008-4501

Application 10/674,108

CONCLUSION

Appellant has not identified reversible error in the Examiner's obviousness determination. The decision of the Examiner rejecting claims 1-7 and 9-12 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

PL Initial:
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	29006-2	2438

21130 7590 10/19/2007
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EXAMINER
AHMAD, NASSER

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APPLICATION NO./ CONTROL NO.	FILING DATE	FIRST NAMED INVENTOR / PATENT IN REEXAMINATION	ATTORNEY DOCKET NO.
10674108	9/29/03	GOECKE, THOMAS R.	29006-2

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EXAMINER

Nasser Ahmad

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The Information Disclosure Statement filed 8/24/2004 included prior art labeled "AR" which was inadvertently not initialled by the examiner.

Hence, a copy of the PTO-1449, with the box "AR" initialed by the examiner is attached herewith.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nasser Ahmad whose telephone number is 571-272-1487. The examiner can normally be reached on Monday Through Thursday from 7:30AM to 4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rena Dye, can be reached on 571-272-3186. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Nasser Ahmad
Nasser Ahmad
Primary Examiner
Art Unit 1794

10/17/07

Subst. Form PTO-1449

APPLICANT'S(S) INFORMATION DISCLOSURE STATEMENT

Atty. Docket No.: GOEC 2 00001

Serial No.: 10/674,108

Applicant(s): Goecke

Filing Date: September 29, 2003

Group: ~~1772~~ 1794

U.S. PATENT DOCUMENTS

Initial*		Document No.	Date	Name	Class	Subcl.	Filing Date
INA/	AA	5,061,559	29OC1991	Ogusi et al.			
INA/	AB	5,246,773	21SE1993	Mamish			
INA/	AC	5,496,636	05MR1996	Gu et al.			
INA/	AD	6,036,997	14MR2000	Ragland et al.			
INA/	AE	6,245,382	12JE2001	Shvartsman et al.			
INA/	AF	6,277,468	21AU2001	Nakamoto et al.			
INA/	AG	6,509,084	21JA2003	Sturtevant et al.			
	AH						
	AI						
	AJ						
	AK						

FOREIGN PATENT DOCUMENTS

		Document No.	Date	Country	Class	Subcl.	Translation?
	AL						
	AM						
	AN						
	AO						
	AP						
	AQ						

OTHER ART

INA/	AR	High Quality Tapes and Labels, Windmill Tapes - Industrial PVC Tapes, http://www.windmilltapes.com Product Data Sheet (DATE UNKNOWN)
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	AT	
	AU	

Examiner: /Nasser Ahmad/

Date Considered: 10/17/2007

- EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if in conformance and not considered. Include copy of this form with next communication to applicant.

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Appeal No: 2008-4501
Application: 10/674,108
Appellant: Thomas R. Goecke

Board of Patent Appeals and Interferences Docketing Notice

Application 10/674,108 was received from the Technology Center at the Board on June 19, 2008 and has been assigned Appeal No: 2008-4501.

A review of the file indicates that the following documents have been filed by appellant:

Appeal Brief filed on: June 15, 2007
Reply Brief filed on: NONE
Request for Hearing filed on: NONE

In all future communications regarding this appeal, please include both the application number and the appeal number.

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By order of the Board of Patent Appeals and Interferences



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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Thomas R. Goecke**

Confirmation No.: 2438

Serial No.: 10/674,108

Art Unit: 1772

Filed: **September 29, 2003**

Examiner: **Nasser Ahmad**

Title: **PRESSURE SENSITIVE ADHESIVE TAPE
FOR FLOOR MARKING**

Appeal No.: 2008-4501

Docket No. 5923.0001

MAIL STOP: APPEAL BRIEF – PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

CERTIFICATE OF MAILING UNDER 37 C.F.R. 1.8

I hereby certify that the below-identified papers are being deposited with the United States Postal Service with sufficient postage as "First Class Mail" on April 17, 2009 in an envelope addressed to Mail Stop: Appeal Brief – Patents, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Denise Goldinger

Items enclosed herewith

1. Transmittal Form (1 page)
2. Brief (7 pages)
3. Return receipt postcard

P:\Shieldmark (5923)\Certificate of Mailing re Request for Rehearing re Serial No. 10 674,108.doc



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Thomas R. Goecke**

Confirmation No.: **2438**

Serial No.: **10/674,108**

Art Unit: **1772**

Filed: **September 29, 2003**

Examiner: **Nasser Ahmad**

Title: **PRESSURE SENSITIVE ADHESIVE TAPE
FOR FLOOR MARKING**

Appeal No. **2008-4501**

Docket No.: **5923-0001**

MAIL STOP: APPEAL BRIEF – PATENTS

Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

Dear Sir:

REQUEST FOR REHEARING UNDER 37 CFR §41.52

This Request for Rehearing ("Request") is being filed in response to the Decision on Appeal dated February 19, 2009 ("Decision"). As the Request is being filed within two (2) months of the Decision and is timely.

In the Decision, the Board of Patent Appeals and Interferences ("the Board") affirmed the rejections of claims 1-7 and 9-12 as being unpatentably obvious over various combinations of three references. The Applicant respectfully requests reconsideration of the Decision for the reasons set forth below.

The rejections upheld by the Decision are all obviousness-type rejections variously combining an elastic electrical tape ("Oace"), an inelastic wallboard spacer ("Hughart") and an inelastic polymer backing used in a tape ("Guenther"). The Board

has overlooked or misapprehended several points raised in the briefs as discussed particularly below.

The Office Fails to Make Prima Facie Case of Obviousness

Relevant case law requires that a proper obviousness rejection under 35 U.S.C. § 103 identify each and every claim limitation in the prior art (KSR International Co. v. Teleflex Inc., 550 U.S. 398, 418 (2007); In re Royka, 490 F.2d 981, 180 U.S.P.Q. 580 (CCPA 1974)). The KSR Court noted that merely finding each claimed element in the prior art, without more, was insufficient to find the invention obvious. Id. Here however, the Office has not provided substantial evidence identifying each and every claimed element in the prior art. A reviewing court must reverse the Board's findings if they are unsupported by substantial evidence. Dickinson v. Zurko, 527 U.S. 150, 152 (1999); 5 U.S.C. § 706 (2007).

Claim 11

Independent Claim 11 calls for, among others, an adhesive tape comprising an average thickness between 65 mil and 69 mil. See, Claim 11; Appeal Brief, p. 12 (inadvertently referencing units of "millimeter" instead of "mil," as claimed).

Certain conversion principles may be helpful to have in the record. A "mil" is a unit identifying 1/1000th of an inch. A micro-meter or micron (designated μm) is 10^{-6} meter. A meter is 39.37 inches. A micro-meter is thus 0.00003937 inches. These conversions are capable of such instant and unquestionable demonstration as to defy dispute. MPEP 2144.03 (A). The chart below converts units in the claim and the applied references to inches.

Claim 11 (polymer and adhesive)	Oace (backing film)	Hughart (spacer)	Guenther (polymer and adhesive)
65 – 69 mil	4 – 20 mil	.5 inch (estimate)	70 – 600 μ m
.065 – .069 inch	.004 – .02 inch	.5 inch	.0028 – .024 inch

From the conversions outlined above, it is plain that none of the references disclose or suggest a tape with a polymer plus adhesive thickness in the .065 – .069 inch claimed range. Indeed, the closest endpoint in the Guenther range would need to be increased by almost 300% to meet the claim.

Neither the Examiner nor the Board has made any attempt to address the failure. In the Examiner's answer, claim 11 receives a scant five sentences of discussion (Examiner's Answer, pp. 6 and 8) none of which even mention the thickness limitation. The Decision only refers to the various thickness limitations in passing (Decision, p. 8) and does not find that the prior art included each element claimed – as is required to support a prima facie case of obviousness.

Because the Examiner failed to meet the initial burden of supporting a prima facie case of obviousness, the rejection is not supported by substantial evidence and should be reversed.

Claims 1 and 12

Independent Claims 1 and 12, among others, each recite a thickness range of between 0.020" to 0.065". Claim 1 calls for the range of thicknesses to be "about" 0.020" to 0.065", while claim 12 recites the range of 0.020" to 0.065".

The Examiner and the Board conclude that Oace's tape includes a polymer with a backing film of 4 to 20 mils thickness. (Answer, p. 3; Decision, p. 3.) While not expressly stated, the rejections appear to be that Oace's disclosure of a range of 4 - 20 mils, equal to 0.004 - 0.020 inches, anticipates the claimed range 0.020 – 0.065 inches by

touching the lower boundary, i.e. 0.020 inches. This position, that Oace is deemed to anticipate the claimed thickness range is evidenced by the Examiner's combination of the Hughart reference in claim 1 (to teach only the hardness) and the Guenther reference in claim 12 (to teach only the peel adhesion). In other words, since neither secondary reference addressed the thickness limitation, it would have to be taught by the primary reference, Oace, to properly form the basis of rejection.

The Court of Appeals for the Federal Circuit has held that it is reversible "clear error" for a court to conclude that a partially overlapping range anticipates a different claimed range. Atofina v. Great Lakes Chem. Corp., 441 F.3d 991, 78 USPQ2d 1417 (Fed. Cir. 2006). In Atofina, the lower court found that a prior art reference disclosing a temperature range of 150 – 350 °C rendered a claimed range of 330 – 450 °C unpatentable. The Federal Circuit reversed reasoning that the slight 20 °C overlap is not disclosed as a species of the claimed generic range. "The [prior art] disclosure is only that of a range, not a specific temperature in that range, and the disclosure of a range is no more a disclosure of the end points of the range than it is of each of the intermediate points." Id.

Here, the Office erroneously contends that an overlap at only one point – 0.020 inches – is sufficient disclosure of the claimed range. This is clear error. Quoting the Atofina court, "although there is a slight overlap, no reasonable fact finder could determine that this overlap describes the entire claimed range with sufficient specificity to anticipate this limitation." Id. Because the Examiner failed to meet the initial burden of supporting a prima facie case of obviousness, the rejection is not supported by substantial evidence and should be reversed.

Even If The Unexplained Failures Of The Prior Art Are Overcome, The Proposed Combinations Cannot Support an Obviousness Rejection.

An obviousness rejection is improper if the proposed modification would render the prior art unsatisfactory for its intended purpose. In re Gordon, 733 F.2d 900, 221 USPQ 1125 (Fed. Cir. 1984). All the combinations suggested by the Examiner would defeat the purpose of one or both references. See, Appeal Brief, pp. 7 - 8.

Claims 1-7 and 9-11

Claims 1-7 and 9-11 stand rejected as obvious combinations of the elastic, electrical tape described by Oace and the inelastic spacer strips described by Hughart. (Examiner's Answer, pp. 3-4 and 6). The Office concedes that Oace fails to teach the hardness limitations, but points to Hughart to remedy the deficiency. In support of combination, the Examiner declared it would be obvious to modify Oace "to provide for hardness imparted for structural strength to the tape." Id.

However, modifying the Oace tape "to provide for hardness imparted for structural strength" would render it unsatisfactory for its intended purpose. Oace describes, and the Decision acknowledges, that one intended feature of Oace is to provide "a stretchable and elastic" tape. (Oace, col. 3, lines 56-75; Decision, p. 3). The intended purpose of stretchability and elasticity are typically associated with "softer" items. See, Oace, col. 6, lines 74-75 and col. 1, line 48 bridging to col. 2, line 1. Despite the express purpose, the Office proposes "hardening" the tape to the upper limits of the Shore A hardness scale overlooking the adverse effects to the important stretch and elastic characteristics.

Because the proposed combination would render the prior art unsatisfactory for its intended purpose by making the Oace tape inelastic, the rejection is improper and should be reversed.

Claim 12

Claim 12 stands rejected as an obvious combination of the elastic, electrical tape described by Oace and the diaper tape of Guenther. (Examiner's Answer, p. 5). Oace admittedly fails to teach the peel adhesion limitation, and the Office looks to Guenther to provide the teaching. The Office reasons that the motivation for the combination is "to provide for improved peel adhesion." Id.

Oace's electrical tape is intended to be wound upon itself in roll form on suitable cores. (Oace, col. 5, lines 48-50; col. 8, lines 59-60; and col. 9, lines 21-22). In use, the tape is pulled off the rolls by hand and stretched onto a workpiece such as a wire splice. (Oace, col. 4, lines 32-44; col. 7, lines 15-17). The adhesive is repeatedly described as "tacky," but "eucohesive" meaning that the adhesive will not delaminate when unwound and handled. (Oace, col. 3, lines 6-12; and col. 9, lines 3-7).

Guenther describes a completely different adhesive that would destroy the features expressly described and claimed by Oace. Guenther describes its adhesive (12) as "permanently" attaching the tape to the diaper. (Guenther, col. 8, lines 3-8). It is the discussion of this permanent adhesive that the Office relied upon as disclosing the claimed peel adhesion limitations. (Examiner's Answer, p. 5). To be sure, a permanent adhesive on Oace's electrical tape would render it inoperable as a user would be unable to unroll the tape to apply to a workpiece. The Board attempts to remedy the failure of the proposed combination by citing to an alternative embodiment of a removable

adhesive rendered "partially detackified." (Decision, p. 4). What is missing from the alternative "partially detackified" embodiment however, is the peel adhesion claim limitation. In other words, the claim and Guenther's permanently adhered embodiment are not intended to be easily removed. Thus, a relatively "strong" peel adhesion is described. Oace and Guenther's alternate embodiment are intended to be user peelable, thus, have a relatively "weak" peel adhesion. To the extent Guenther discloses a strong peel adhesion, it destroys the obviousness rejection by rendering the primary Oace reference unsuitable for its intended use. To the extent Guenther discloses a weak peel adhesion, it destroys the obviousness rejection by not teaching each and every element.

In view of the foregoing, the Applicant respectfully submits that the rejections are without substantial evidence, are all overcome or both. The Decision should be reconsidered and the Examiner reversed.

CONCLUSION

All pending Claims 1-7 and 9-12, have not been shown to be obvious. Applicant requests that all rejections be reversed and that all claims be allowed.

AUTHORIZATION TO CHARGE DEPOSIT ACCOUNT

Although it is believed that no fees are necessary, the director is hereby authorized to charge payment of any fees associated with this communication or credit any over payment to Deposit Account No. 504883.

Respectfully submitted,



W. Scott Harders
Registration No. 42,629

Date: April 17, 2009

BRENNAN, MANNA & DIAMOND, LLC

75 East Market Street

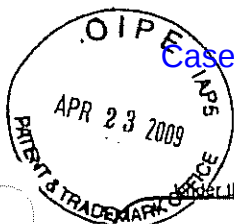
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TRANSMITTAL FORM

(to be used for all correspondence after initial filing)

Total Number of Pages in This Submission

Application Number 10/674,108

Filing Date 09/29/2003

First Named Inventor Goecke, Thomas R.

Art Unit 1772

Examiner Name Nasser Ahmad

Attorney Docket Number 5923.0001

ENCLOSURES (Check all that apply)

<input type="checkbox"/> Fee Transmittal Form <input type="checkbox"/> Fee Attached <input type="checkbox"/> Amendment/Reply <input type="checkbox"/> After Final <input type="checkbox"/> Affidavits/declaration(s) <input type="checkbox"/> Extension of Time Request <input type="checkbox"/> Express Abandonment Request <input type="checkbox"/> Information Disclosure Statement <input type="checkbox"/> Certified Copy of Priority Document(s) <input type="checkbox"/> Reply to Missing Parts/ Incomplete Application <input type="checkbox"/> Reply to Missing Parts under 37 CFR 1.52 or 1.53	<input type="checkbox"/> Drawing(s) <input type="checkbox"/> Licensing-related Papers <input type="checkbox"/> Petition <input type="checkbox"/> Petition to Convert to a Provisional Application <input type="checkbox"/> Power of Attorney, Revocation <input type="checkbox"/> Change of Correspondence Address <input type="checkbox"/> Terminal Disclaimer <input type="checkbox"/> Request for Refund <input type="checkbox"/> CD, Number of CD(s) _____ <input type="checkbox"/> Landscape Table on CD	<input type="checkbox"/> After Allowance Communication to TC <input checked="" type="checkbox"/> Appeal Communication to Board of Appeals and Interferences <input type="checkbox"/> Appeal Communication to TC (Appeal Notice, Brief, Reply Brief) <input type="checkbox"/> Proprietary Information <input type="checkbox"/> Status Letter <input checked="" type="checkbox"/> Other Enclosure(s) (please identify below): Return receipt postcard
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SIGNATURE OF APPLICANT, ATTORNEY, OR AGENT

Firm Name	Brennan, Manna & Diamond, LLC		
Signature			
Printed name	W. Scott Harders		
Date	04/17/2009	Reg. No.	42,629

CERTIFICATE OF TRANSMISSION/MAILING

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Signature			
Typed or printed name	Denise Goldinger	Date	04/17/2009

This collection of information is required by 37 CFR 1.5. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.11 and 1.14. This collection is estimated to 2 hours to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/674,108	09/29/2003	Thomas R. Goecke	29006-2

CONFIRMATION NO. 2438

POWER OF ATTORNEY NOTICE



21130
BENESCH, FRIEDLANDER, COPLAN & ARONOFF LLP
ATTN: IP DEPARTMENT DOCKET CLERK
200 PUBLIC SQUARE
SUITE 2300
CLEVELAND, OH 44114-2378

Date Mailed: 05/05/2009

NOTICE REGARDING CHANGE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/29/2009.

- The Power of Attorney to you in this application has been revoked by the assignee who has intervened as provided by 37 CFR 3.71. Future correspondence will be mailed to the new address of record(37 CFR 1.33).

/s/leutchit/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101



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APPLICATION NUMBER	FILING OR 371(C) DATE	FIRST NAMED APPLICANT	ATTY. DOCKET NO./TITLE
10/674,108	09/29/2003	Thomas R. Goecke	29006-2

CONFIRMATION NO. 2438

POA ACCEPTANCE LETTER



OC000000035788271

86625
Brennan, Manna & Diamond, LLC
The Carnegie Building
75 East Market Street
Akron, OH 44308

Date Mailed: 05/05/2009

NOTICE OF ACCEPTANCE OF POWER OF ATTORNEY

This is in response to the Power of Attorney filed 04/29/2009.

The Power of Attorney in this application is accepted. Correspondence in this application will be mailed to the above address as provided by 37 CFR 1.33.

/sleutchit/

Office of Data Management, Application Assistance Unit (571) 272-4000, or (571) 272-4200, or 1-888-786-0101

Electronic Acknowledgement Receipt

EFS ID:	5242543
Application Number:	10674108
International Application Number:	
Confirmation Number:	2438
Title of Invention:	ADHESIVE TAPE
First Named Inventor/Applicant Name:	Thomas R. Goecke
Customer Number:	21130
Filer:	Walter Scott Harders
Filer Authorized By:	
Attorney Docket Number:	29006-2
Receipt Date:	29-APR-2009
Filing Date:	29-SEP-2003
Time Stamp:	15:05:55
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	no				
File Listing:					
Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
1	Power of Attorney	revocationpoa.pdf	174159 e99c138f1e6c1c5f6e1725208d61ed6c20baa135	no	2
Warnings:					
Information:					

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

REVOCATION AND NEW POWER OF ATTORNEY

Commissioner of Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir or Madam:

I, Thomas R. Goecke, the:

☐ Applicant/Inventor

or

☒ Assignee of record of the entire interest (Statement under 37 CFR 3.73(b) submitted herewith)

of the applications identified below, hereby revoke any and all previous Powers of Attorney and appoints Practitioner(s) associated with the following Customer Number as my attorney(s) or agent(s) to prosecute the listed applications and to transact all business in the United States Patent and Trademark Office connected therewith:

86625

Please recognize the correspondence address for all identified applications as that associated with the above-mentioned Customer Number.

Title	Application No.	Filing Date
Pressure Sensitive Adhesive Tape for Floor Marking	10/674,108	09/29/03
Contrasting Tape	11/580,634	10/12/06
Marking Applicator & Method	11/363,356	02/27/06

Respectfully submitted,

Thomas R. Goecke

Date: 4/23/09

By: Thomas R. Goecke
Name:
President
Title:

P:\Shieldmark (5923)\Revocation - POA.DOC

STATEMENT UNDER 37 CFR 3.73(b)

Shieldmark, Inc., a corporation, states that it is the assignee of the entire right, title and interest in the applications identified below:

Title	Application No.	Filing Date
Pressure Sensitive Adhesive Tape for Floor Marking	10/674,108	09/29/03
Contrasting Tape	11/580,634	10/12/06
Marking Applicator & Method	11/363,356	02/27/06

The assignments from the inventor(s) of the patent applications identified above were recorded in the United States Patent and Trademark Office at:

Application No.	Reel	Frame
10/674,108	016154	0333
11/580,634	018611	0843
11/363,356	017668	0900

The undersigned (whose title is supplied below) is authorized to act on behalf of the assignee.

Thomas R. Goecke
Signature

Thomas R. Goecke
Printed or Typed Name

4/23/09
Date

President
Title



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674.108	09/29/2003	Thomas R. Goecke	29006-2	2438

86625 7590 07/16/2009
 Brennan, Manna & Diamond, LLC
 The Carnegie Building
 75 East Market Street
 Akron, OH 44308

EXAMINER

DYE, RENA

ART UNIT	PAPER NUMBER
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1794

MAIL DATE	DELIVERY MODE
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07/16/2009

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS R. GOECKE

Appeal 2008-004501
Application 10/674,108
Technology Center 1700

Decided:¹ July 16, 2009

Before CATHERINE Q. TIMM, LINDA M. GAUDETTE, and
KAREN M. HASTINGS, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON REQUEST FOR REHEARING

Appellant requests reconsideration of our Decision of February 19, 2009 ("Decision") wherein we sustained the Examiner's rejections of the appealed claims under 35 U.S.C. § 103(a). (Request for Rehearing ("Req.")),

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

Appeal 2008-004501
Application 10/674,108

filed Apr. 23, 2009.) Appellant contends that the Board erred in its Decision for the following reasons (hereinafter "Reasons"):

1. neither the Examiner nor the Board identified a disclosure or suggestion in the applied prior art of the polymer plus adhesive thickness of .065-.069 inch recited in claim 11 (Req. 2-3);

2. the Examiner and the Board incorrectly found that the slight overlap between Oace's disclosed thickness range of .004 to .020 inches and the range of .020 to .065 inches recited in claims 1 and 12 was sufficient to establish an anticipation of the claimed range (Req. 3-4);

3. the Examiner and the Board overlooked the fact that modification of Oace's tape to increase its hardness to the claimed Shore A Hardness range would render the tape inelastic and, therefore, unsatisfactory for its intended purpose (Req. 5-6 (discussing claims 1-7 and 9-11));

4. the Examiner and the Board overlooked the fact that modification of Oace's adhesive layer based on Guenther's disclosure would render Oace's tape unsatisfactory for its intended purpose since Guenther relates to a permanent adhesive (Req. 6-7 (discussing claim 12)); and

5. the Board relied on a different embodiment in Guenther than the Examiner, and modification of Oace's adhesive in view of this embodiment would have resulted in a combination which fails to include all of the limitations recited in claim 12 (Req. 6-7).

We have reviewed our Decision in light of the arguments presented by Appellant in the Request. However, we are not persuaded that our Decision was in error.

Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir.

Appeal 2008-004501
Application 10/674,108

2006) (“On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of prima facie obviousness or by rebutting the prima facie case with evidence of secondary indicia of nonobviousness.” (*quoting In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998))). Therefore, we look to Appellant’s Brief to show error in the proffered prima facie case. *See* 37 C.F.R. § 41.37(c)(1)(vii) (“Any argument or authorities not included in the brief or a reply brief filed pursuant to § 41.41 will be refused consideration by the Board, unless good cause is shown.”). With respect to a Request for Rehearing of the Board’s Decision, 37 C.F.R. § 41.52(a)(1) provides that an Appellant must “state with particularity the points believed to have been misapprehended or overlooked by the Board in its Decision.” This section further states that “[a]rguments not raised in the briefs before the Board and evidence not previously relied upon in the brief and any reply brief(s) are not permitted in the request for rehearing.” *Id.*

Appellant’s Reasons 1-4 contain arguments which were not previously raised in Appellant’s Appeal Brief. In other words, because these arguments were not previously before the Board, it is improper for Appellant to identify these Reasons as “points believed to have been misapprehended or overlooked by the Board in its Decision” (37 C.F.R. § 41.52(a)(1)). However, while these arguments will not be addressed on the merits, we do point out at least the following inaccuracies in Appellant’s Reasons:

Turning first to Reason 1, Appellant is directed to Findings of Fact (“FF”) 6, 7, and 10 of the Decision which clearly identify Oace as teaching the recited thickness limitation. In the Appeal Brief, Appellant did not (*see* Decision 10), nor does he currently (*see* Req. 4), dispute the Examiner’s

Appeal 2008-004501
Application 10/674,108

finding that the thickness of Oace's tape overlaps Appellant's claimed range. With respect to Reason 2, we note that the claims were rejected under 35 U.S.C. § 103, not under 35 U.S.C. § 102. Our reviewing court has consistently held that a prima facie case of obviousness exists where the prior art and claimed ranges overlap, as well as in those cases where the claimed range and the prior art range, though not overlapping, are sufficiently close that one skilled in the art would have expected them to have the same properties. *See, e.g., In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003); *In re Geisler*, 116 F.3d 1465, 1469 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990); *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 783 (Fed. Cir. 1985). Turning to Reasons 3 and 4, Appellant is directed to FF 12 which indicates that the Board considered a related issue raised in the Appeal Brief, but determined that it was not persuasive of reversible error (*see* FF 11 and Decision 10 (explaining that "Appellant did not address the Examiner's rationale for rejecting the claims")). However, Appellant has not identified, nor do we find, where the arguments contained in Reasons 3 and 4 were previously presented in the Appeal Brief.

Turning now to Reason 5, Appellant is directed to FF 4 which lists the factual findings relied on by the Examiner in rejecting claim 12 (*see* Ans. 4). Appellant is further directed to the Analysis portion of the Decision (pp. 9-10) which clearly indicates that the Board's affirmance is based on Appellant's failure to identify error in the facts and reasons relied on by the Examiner in rejecting the claims.

Appeal 2008-004501
Application 10/674,108

In conclusion, based on the foregoing, we have granted Appellant's request to the extent that we have reconsidered our Decision, but we deny Appellant's request to make any change therein.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

DENIED

PL Initial:
sld

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& ARONOFF LLP
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: **Thomas R. Goecke**

Confirmation No.: **2438**

Serial No.: **10/674,108**

Art Unit: **1772**

Filed: **September 29, 2003**

Examiner: **Nasser Ahmad**

Title: **PRESSURE SENSITIVE ADHESIVE TAPE
FOR FLOOR MARKING**

Appeal No.: **2008-4501**

Docket No. **5923.0001**

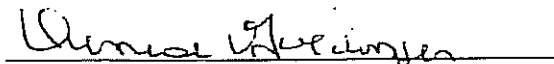
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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: **Thomas R. Goecke**

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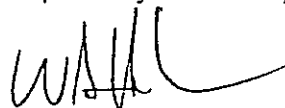
Appeal No. **2008-4501**

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**NOTICE OF APPEAL UNDER 37 C.F.R. § 1.302
TO THE COURT OF APPEALS FOR THE FEDERAL CIRCUIT**

Pursuant to 35 U.S.C. § 142 and 37 C.F.R. § 1.302, applicant Thomas R. Goecke hereby files a Notice of Appeal to the United States Court of Appeals for the Federal Circuit. Applicant seeks review of the Decision on Appeal by the Board of Patent Appeals and Interferences in Appeal No. 2008-4501 on February 19, 2009 and the Decision on Request for Rehearing rendered in the same case on July 16, 2009. This Notice of Appeal is being filed within two months of the date of the Decision on Request for Rehearing, and, therefore, is timely filed by Applicant. A copy of this Notice of Appeal and the requisite docket fee are being filed concurrently with the Clerk of the U.S. Court of Appeals for the Federal Circuit.

Respectfully submitted,



W. Scott Harders

Registration No. 42,629

Date: September 14, 2009

BRENNAN, MANNA & DIAMOND, LLC
75 East Market Street
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PROOF OF SERVICE

State of Ohio)
) ss:
City of Akron, County of Summit)

I am employed in the City of Akron, County of Summit, Ohio. I am over the age of 18 and not a party of the within action. My business address is 75 East Market Street, The Carnegie Building, Akron, Ohio 44308.

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**NOTICE OF APPEAL UNDER 37 C.F.R. § 1.302 TO
THE COURT OF APPEALS FOR THE FEDERAL CIRCUIT**

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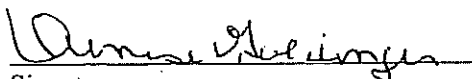
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Executed on September 15, 2009, at Akron, Ohio.

Denise Goldinger
Printed Name


Signature

NOTE: This order is non precedential.

United States Court of Appeals for the Federal Circuit

2010-1048
(Serial No. 10/674,108)

IN RE THOMAS R. GOECKE

Appeal from the United States Patent and Trademark Office,
Board of Patent Appeals and Interferences.

ON MOTION

ORDER

Thomas R. Goecke and the Director of the United States Patent and Trademark Office move jointly for a remand to the Patent and Trademark Office for further proceedings.

Upon consideration thereof,

IT IS ORDERED THAT:

- (1) The motion is granted.
- (2) Each side shall bear its own costs.

FOR THE COURT

MAY 06 2010

Date

/s/ Jan Horbaly

Jan Horbaly
Clerk

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UNITED STATES COURT OF APPEALS
FOR THE FEDERAL CIRCUIT

By: Jan Horbaly Date: 5/6/10

cc: W. Scott Harders, Esq.
Raymond T. Chen, Esq.

s20

ISSUED AS A MANDATE: MAY 06 2010

FILED
U.S. COURT OF APPEALS FOR
THE FEDERAL CIRCUIT

MAY 06 2010

JAN HORBALY
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	5923.0001	2438
86625 7590 06/15/2010 Brennan, Manna & Diamond, LLC The Carnegie Building 75 East Market Street Akron, OH 44308			EXAMINER DYE, RENA	
			ART UNIT	PAPER NUMBER
			1782	
			MAIL DATE	DELIVERY MODE
			06/15/2010	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS R. GOECKE

Appeal 2008-004501
Application 10/674,108
Technology Center 1700

Before DALE M. SHAW, *Division 2 Support Administrator*.

ORDER REMANDING TO EXAMINER

Applicant, appealed the February 19, 2009 decision and the July 16, 2009 decision on rehearing of the Board of Patent Appeals and Interferences (“Board”) to the Court of Appeals for the Federal Circuit (CAFC). On May 6, 2010, after the United States Patent and Trademark Office (“USPTO”) and appellant filed a joint motion to have the case remanded to the USPTO for further proceedings, the CAFC granted the motion for remand.

Accordingly, this application is remanded to the Examiner for further proceedings consistent with the order of the CAFC.

Appeal 2009-002479
Application 08/405,454

If there are any questions pertaining to this Order, please contact the
Board of Patent Appeals and Interferences at 571-272-9797.

DMS

Brennan, Manna & Diamond, LLC
The Carnegie Building
75 East Market Street
Akron OH 44308

(Serial No. 10/674,108)

In The
United States Court of Appeals
For The Federal Circuit

IN RE THOMAS R. GOECKE

**APPEAL FROM THE UNITED STATES PATENT AND TRADEMARK
OFFICE, BOARD OF PATENT APPEALS AND INTERFERENCES**

BRIEF OF APPELLANT

W. Scott Harders
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Counsel for Appellant

Form 9

FORM 9. Certificate of Interest

UNITED STATES COURT OF APPEALS FOR THE FEDERAL CIRCUIT

in RE Goecke

v.

No. 2010-1048

CERTIFICATE OF INTEREST

Counsel for the (petitioner) (appellant) (respondent) (appellee) (amicus) (name of party)

Thomas R. Goecke certifies the following (use "None" if applicable; use extra sheets if necessary):

1. The full name of every party or amicus represented by me is:

Thomas R. Goecke

2. The name of the real party in interest (if the party named in the caption is not the real party in interest) represented by me is:

Shieldmark, Inc

3. All parent corporations and any publicly held companies that own 10 percent or more of the stock of the party or amicus curiae represented by me are:

None

4. ☐ The names of all law firms and the partners or associates that appeared for the party or amicus now represented by me in the trial court or agency or are expected to appear in this court are:

Brennan, Maurer & Diamond; W. Scott Horders (Appeared in Agency and expected to appear in this court)
Benesch, Friedlander, Caplan & Amick; W. Scott Horders (Appeared in Agency)
Fay, Sharpe, Fagan, Novich & McKee; Scott A. McColister, Timothy E. Nauman (Appeared in Agency)

12/28/2009

Date

W. Scott Horders

Signature of counsel

W. Scott Horders

Printed name of counsel

Please Note: All questions must be answered

cc: Office of the Solicitor

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Statement of Related Cases

No other appeal in or from the same proceeding before the Board of Patent Appeals and Interferences (“Board”) of the United States Patent and Trademark Office (“USPTO”) was previously before this Court or any other appellate court. There are no known cases pending in this Court or any other court that would directly affect or be directly affected by this Court’s decision in the pending appeal.

Jurisdictional Statement

This Court has jurisdiction pursuant to 28 U.S.C. § 1295(a)(4)(A) to review final judgments of the Board. A Notice of Appeal from the Board's July 16, 2009 Decision on Request for Rehearing, affirming the Board's February 19, 2009 Decision on Appeal, was timely filed on September 15, 2009 under 37 C.F.R. § 1.302.

Introduction

This is a patent appeal of obviousness rejections from the USPTO. Since the U.S. Supreme Court decision in KSR v. Teleflex, 550 U.S. 398 (2007), aspects of the obviousness analysis have been clarified, but certain established legal principles remain. Among these familiar principles are that the USPTO bears the initial burden in establishing the obviousness of a claimed invention. If the USPTO fails to carry its burden and no other statutory impediments exist, the applicant is entitled to a patent. If the USPTO is deemed to carry its burden, and Appellant provides arguments refuting the obviousness conclusion, the USPTO must consider those arguments.

Statement of the Issues

In the Decision on Appeal, the Board affirmed the Examiner's rejection of claims 1-7 and 9-12 in U.S. Patent Application Serial No. 10/674,108 as being obvious under 35 U.S.C. § 103(a) over the combination of U.S. Patent No. 2,559,990 entitled "Insulating Tape" in the name of Oace ("Oace"), U.S. Patent No. 6,668,504 B2 entitled "Sound-Deadened Wall and Wall Panel For Same" in the name of Hughart ("Hughart"), and U.S. Patent No. 6,461,751 B1 entitled "Article Closure Tape for an Absorbent" in the name of Guenther ("Guenther"). In requesting reversal of this decision, Appellant seeks review of the following issues:

1. Whether the Examiner and Board met their burden of establishing a case of prima facie obviousness if they failed to identify each and every element in the prior art and used Appellant's claims as a road map to piecemeal a rejection?
2. In the alternative, if a prima facie case of obviousness was established, whether the rejection is overcome when the proposed combination is shown to render the references unsuitable for their intended purposes.

Statement of the Case

The Board of Patent Appeals and Interferences (the “Board”) incorrectly affirmed the decision of the examiner that claims 1-7 and 9-12 of U.S. Patent Application Serial Number 10/674,108 (the “Goecke application”) were unpatentably obvious. The Board made several incorrect factual determinations leading to an incorrect legal conclusion regarding the obviousness of the claims over several proposed combinations.

The decision of the Board should be reversed and the claims passed to allowance.

Statement of the Facts

A. Summary of the Claimed Subject Matter.

U.S. Patent Application Serial Number 10/674,108 (the “Goecke application”) describes an adhesive tape used instead of paint to mark floors, for example, in factory or industrial environments. (A24, title, paragraph 2). The Goecke application claims embodiments having relevant limitations directed toward:

thickness (A96, 97, all pending claims, 1-7 and 9-12),
hardness (A96, 97, claims 1-7 and 9-11); and
peel adhesion (A97, claim 12).

The thickness limitations are themselves claimed in two different embodiments. One relates to the thickness of a polymer layer alone (claims 1-7, 9, 10 and 12) and the other relates to the thickness of the entire adhesive tape including both the polymer layer and a sub-element adhesive layer (claim 11).

1. Representative Claim 1.

Claim 1 is representative of the polymer layer thickness and hardness limitations and is reproduced below:

1. An adhesive tape comprising:

a polymer layer with a Shore A Hardness of between about 92 and 100 and substantially uniform thickness of between about 0.020" to 0.065"; and

a layer of adhesive is attached to the polymer layer.

(A96, claim 1, emphasis supplied).

Thus, according to claim 1, the polymer layer element is claimed with both the hardness and thickness limitations. There is no thickness limitation in claim 1 for the separate layer of adhesive or for the overall adhesive tape.

2. Representative Claim 11.

Claim 11 is representative of the combined polymer and adhesive layers and is reproduced below:

11. An adhesive tape comprising:

a polymer layer having a Shore A Hardness of between about 92 and 100; and

a layer of pressure sensitive adhesive comprising a first side and an opposed second side, the first side being in direct and uninterrupted contact with the polymer layer where the adhesive tape comprises an average thickness of between 65 mil and 69 mil. [converted to inches 65 mil and 69 mil = 0.065 and 0.069 inches]

(A97, claim 11, conversion and emphasis supplied).

Slightly different than claim 1, according to claim 11 the overall adhesive tape, comprised of both the polymer and adhesive layers, is limited by the recited thickness.

3. Representative Claim 12.

Claim 12 includes thickness and adhesive limitations. Also as the sole claim directed to peel adhesion, it is representative of the peel adhesion limitation and is reproduced below:

12. An adhesive tape for application to a flooring environment comprising:

a polymer layer having a thickness between 0.020" and 0.065," the polymer layer defining a first side; and

a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment;

where the adhesive tape has a peel adhesion greater than 2.0 lb/in width.

(A97, claim 12, emphasis supplied).

Thus, according to claim 12, among other limitations the overall adhesive tape is limited to the specified peel adhesion.

B. Summary of Prior Art and the Appealed Rejection.

In its Decision the Board upheld the examiner's rejections of representative claim 1 over the combination of Oace's electrical tape in view of Hughart; representative claim 11 over Oace in view of Hughart and Guenther; and representative claim 12 over Oace in view of Guenther.

1. Oace.

Oace is the primary reference and is included in all rejections. The Oace reference relates to the insulation and protection of electrical conductors – in common parlance, electrical tape. (A214-218, column 1). The Board recognized the desirable “stretchable and elastic” characteristics of a tape constructed according to the Oace teachings. (A7). The Office cites Oace as teaching a polymer backing film having a thickness of 4 to 20 mils and an adhesive layer. (A7, 132, 235). Appellant does not dispute these findings.

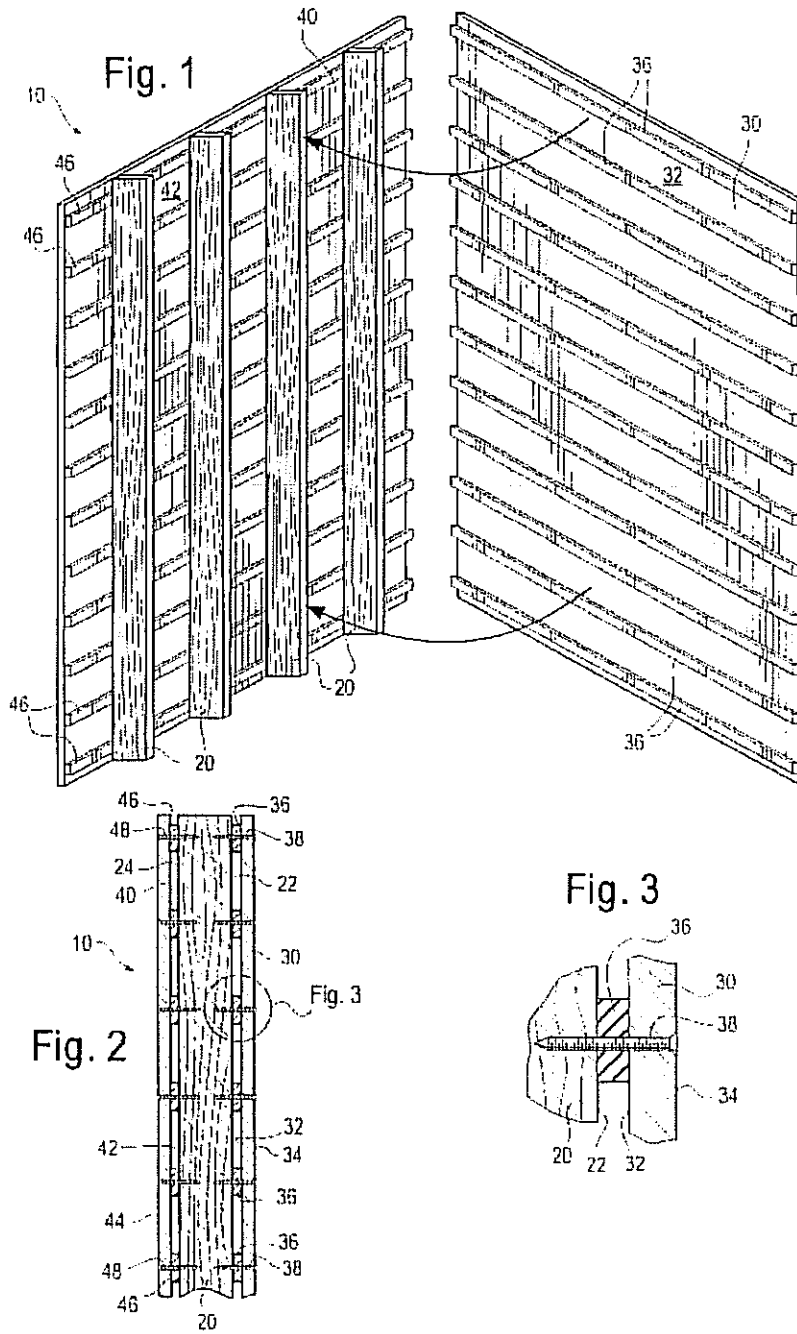
The Office correctly concedes that Oace fails to teach several claimed limitations. First, Oace fails to teach that the polymer backing film has a Shore A hardness in the claimed range of 92-100, the upper end of the hardness scale. (A9, 132). The Office further concedes that Oace fails to teach an adhesive layer exhibiting a relatively strong peel adhesion greater than the claimed 2.0 lb/in width. (A133, 236, 237). Finally, the Office

concedes that Oace fails to teach that the adhesive is a rubberized double-sided tape. (A134, 238). Appellant agrees with the listed failures of Oace's teachings.

2. Hughart.

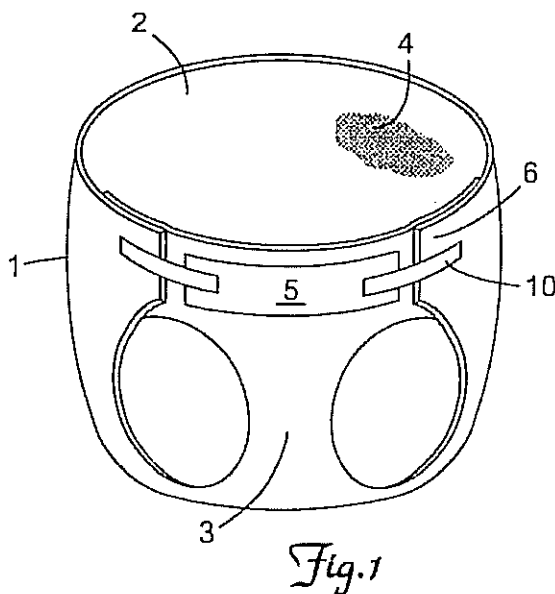
Hughart is a secondary reference pertaining to sound-deadening walls. Reference is made to figures 1-3 from Hughart reproduced on the following page. The sound-deadening effect is achieved by attaching wallboard lengths of an elastomeric spacer (reference number 36) between a room's framing studs (reference number 20) and the overlying wallboard (reference number 30). (A209-212, column 1, lines 24-31, column 2, lines 11-36). Figure 3 depicts an enlarged detail of the area delineated by broken line in figure 2 and is helpful to estimate the cross-sectional size of the elastomeric spacers (reference number 36).

Hughart is cited for its teaching of a polymeric material having a Shore A hardness of 92 and an adhesive layer. (A132, 235). Both the examiner and the Board characterize the elastomeric strip as a "tape." (A13, 132, 235). Appellant does not dispute the hardness and adhesive findings, but disagrees that the spacer can be considered a tape (A147).



3. Guenther.

Guenther is a secondary reference relating to a closure tape (10) for disposable diapers. (A172-188, column 1, lines 5,6). The tape is securely anchored on one side to edge portions (6) of the diaper and removably fastened on the opposing side to a target area (5). (A179, 180, column 1, lines 15-18; column 3, lines 30-62). The securely attached side is described as “permanently” adhered and the specification describes a desired peel adhesion of at least 3.5 N/cm and preferably even greater. (A182, column 8, lines 2-17).



Appellant does not dispute that Guenther’s permanently adhered minimum includes the claimed adhesion of at least 3.5 N/cm.

On the removable side, however, Guenther discloses a different “less aggressive” adhesive or a “partially

deactivated” adhesive to allow the tape to be removably attached to the diaper. (A183, column 9, lines 53-63).

Summary of the Argument

Inventor, patent applicant and Appellant here, Thomas Goecke, is entitled to a patent unless the USPTO can show his claims fail to define patentably over the prior art. The sole statutory provision relied on by the USPTO to reject Mr. Goecke's claims is 35 U.S.C. § 103(a). The patent examiner and the Board have concluded that the claims presented are mere obvious combinations of the prior art. Mr. Goecke disagrees.

The USPTO bears the initial burden of presenting a prima facie case of unpatentability. If the USPTO succeeds in presenting its prima facie case, then Mr. Goecke may present evidence or argument to show that, despite a prima facie case, his claimed invention is not obvious in light of the prior art. On the other hand, if the USPTO's initial burden goes unmet, Mr. Goecke is entitled to a patent.

As will be more fully explained below, here the USPTO has not met its initial burden finding facts supported by substantial evidence. Indeed, even if the USPTO is deemed to have properly presented its prima facie case, Mr. Goecke has met his burden and presented sufficient arguments to overcome the legal conclusion.

Argument

A. Standard of Review.

The determination of whether a claim is obvious under 35 U.S.C. § 103(a) is a legal conclusion based on underlying factual determinations. In re Sullivan, 498 F.3d 1345, 1350 (Fed. Cir. 2007). The Court reviews decisions of the Board regarding the legal conclusion of obviousness de novo and the underlying factual determinations for substantial evidence. Id. Substantial evidence requires the Court to ask whether a reasonable person might find that the evidentiary record supports the Board's conclusion. Id.

B. Arguments.

It is well settled that the PTO bears the initial burden of presenting a prima facie case that the claims before it are unpatentable. In re Sullivan, 1351. If the PTO fails to meet its burden at the initial stage, then without more, the applicant is entitled to grant of the patent. In re Oetiker, 977 F.2d 1443, 1445 (Fed. Cir. 1992).

If the PTO makes a prima facie case, the burden shifts to the applicant to come forward with evidence or argument rebutting the prima facie case. In re Sullivan, 1351. Evidence rebutting a prima facie case is merely facts supporting the opposite conclusion and can include argument or evidence that the suggested combination would render one of the references

unsuitable for its intended use. In re Gordon, 733 F.2d 900, 902 (Fed. Cir. 1984). When presented, the Board must consider that argument or evidence and the legal conclusions drawn from that consideration are reviewed de novo. In re Sullivan, 1350.

I. The Office fails to make a prima facie case of obviousness.

The prima facie case is a procedural tool of patent examination, allocating the burdens between examiner and applicant. In re Oetiker, 1445. The examiner bears the initial burden, on review of the prior art or on any other ground, of presenting a prima facie case of unpatentability. Id.

Establishing a prima facie case turns on underlying factual inquiries involving: (1) the scope and content of prior art, (2) differences between claims and prior art, (3) the level of ordinary skill in pertinent art, and (4) secondary considerations such as commercial success and satisfaction of a long-felt need. Proctor & Gamble Co. v. Teva Pharm. USA, Inc., 566 F.3d 989, 994 (Fed. Cir. 2009) (citing, Graham v. John Deere Co., 383 U.S. 1, 17 (1966)). The Supreme Court has explained that the “teaching, suggestion or motivation” test provides a helpful insight into the legal obviousness inquiry as long as it is not applied rigidly. Id. (citing, KSR Int’l Co. v. Teleflex Inc., 550 U.S. 398 (2007)). Accordingly, under KSR, it remains necessary

to identify some reason that would have led an artisan to modify the prior art in a particular manner to establish prima facie obviousness. Id.

Additionally, the office cannot meet its burden merely by combining elements “from non-analogous sources, in a manner that reconstructs the applicant's invention only with the benefit of hindsight” In re Oetiker, 1447. The Supreme Court in KSR acknowledged the risk of a factfinder “falling prey to hindsight bias” and cautioned against relying on “*ex post* reasoning.” KSR Int’l Co. v. Teleflex Inc., 414. The test is not to be applied rigidly or used to deny factfinders recourse to common sense. However, when non-analogous references are applied piecemeal using the inventors claim as a roadmap, the office fails to present a prima facie case of obviousness. In re Oetiker, 1447. “There must be some reason, suggestion, or motivation found in the prior art whereby a person of ordinary skill in the field of the invention would make the combination. That knowledge can not come from the applicant's invention itself.” Id.

If examination at the initial stage does not produce a prima facie case of unpatentability, then without more, the applicant is entitled to grant of the patent. In re Oetiker, 1445.

- (a) **The Office fails to make a prima facie case of obviousness for independent claim 11 by citing no prior art teaching or explanation of the claimed 65 mil and 69 mil thickness.**

Independent claim 11 calls for, among other elements, “an adhesive tape comprising an average thickness between 65 mil and 69 mil.” (A97). Appellant’s Appeal Brief noted that no combination of references met “the requirement of claim 11 that the adhesive tape have an average thickness of between 65 [mil] and 69 [mil].” (incorrectly referencing units of “millimeters” in lieu of “mil” as claimed and subsequently explained in Appellant’s Request for Rehearing). (A252). The examiner asserted that independent claim 11 was rendered obvious by a combination of Oace in view of Hughart and Guenther, but the Examiner’s Answer was completely silent on the issue of thickness. (A134). Similarly, the Board in its “Findings of Fact” section, repeated the examiner’s position and also omitted any discussion of the thickness limitations. (A7). In its “Analysis” section, the Board ignored independent claim 11 entirely. (A10).

As a point believed to have been misapprehended by the Board, Appellant timely requested reconsideration and explained the shortcomings of the references as applied to independent claim 11. (A252-254). Denying the Request for Reconsideration, the Board inexplicably pointed to its Findings of Fact numbers 6, 7 and 10 as “clearly identify[ing] Oace as

teaching the recited thickness limitation.” (A19). This assertion is plainly erroneous as the cited Findings 6, 7 and 10 do not discuss thickness at all (A9, 10). The Board’s Finding of Fact that does deal with Oace, Finding number 2, found that Oace teaches a “thickness of 4-20 mils....” (A7, paragraph 2). In other words, without any analysis, the office found that Oace’s 4-20 mil thickness “clearly identifies” a non-overlapping claimed range between three and seventeen times greater, i.e. 65-69 mil.

The office wholly fails to explain the differences between the prior art and the claim and, thus fails to make a prima facie case supported by substantial evidence. Because examination at the initial stage did not produce a prima facie case of unpatentability, Appellant is entitled to grant of the patent for at least independent claim 11. In re Oetiker, 1445.

- (b) The Office fails to make a prima facie case of obviousness for independent claims 1 and 12 by using the claims as a roadmap to identify particular elements from non-analogous references.**

Appellant’s application and pending claims are directed toward industrial tapes having, among others, improved hardness and peel adhesion. (A24, 97, claim 12). In rejecting claim 1 and those claims depending therefrom, the office proposed a combination of Oace’s electrical tape and Hughart’s wallboard spacer having a specific Shore A hardness to make its

prima facie case. (A132). While the lumber sized Hughart spacers cannot honestly be called a “tape,” both the office and the Board nevertheless refer to the wallboard spacer as a “tape.” (A9, first paragraph in “Analysis” section; A132, paragraph 7, line 7). Quickly moving past the disparate subject matter, the examiner jumped to the conclusion that the motivation to combine would be “to provide for hardness imparted for structural strength to the tape.” (A132, 235).

Unfortunately, not only are the references non-analogous, but the office also did not find its motivation for imparting strength in any reference to the prior art, from common sense or any explicit analysis. Instead, the motivation for increasing the strength appears to come from appellant’s disclosure itself. For example, appellant’s specification notes “[t]his invention relates to an adhesive tape having superior ... strength....” (A24, paragraph 1). Moreover, testing revealed “substantially improved tear strength in both the machine and traverse directions for the pressure sensitive adhesive tape of this invention.” (A28, middle paragraph).

Thus, because the office attempted to combine non-analogous references and used impermissible hindsight, no prima facie case has been made leaving claim 1 allowable.

Rejecting claim 12, the office proposed a combination of Oace's electrical tape and the specified peel adhesion of Guenther's diaper tape to attempt to make the prima facie case. (A133). The office did successfully locate the specific teaching sought in its piecemeal search of the prior art, but provided no analysis relating to the proposed combination other than the circular motivation: "to provide improved peel adhesion." (A134).

In his Appeal brief, Appellant argued that the office had "failed to consider the subject matter as a whole" and had instead improperly "applied hindsight reasoning" in the rejection of claim 12 (A149). In reply, the office restated its circular reasoned conclusion (A237) adding only that appellant "has failed to show that the cited prior art would not exhibit a peel adhesion" as claimed. (A240).

As above, the office combined discrete elements in the prior art without real explanation and asserted motivation appearing only in appellant's specification. For example, Appellant describes a problem with adhesion in the prior art, "as a result of poor adhesive quality, repeated traffic has a tendency to detach many commercially available tapes from the floor." (A24, paragraph 1). Moreover, Appellant's experimental test results on its inventive tape indicate "substantially increased peel adhesion...." (A29, paragraph 1).

Because the office has failed to establish a prima facie case that the claimed invention is obvious in light of the prior art that has been identified and analyzed, the office has not carried its initial burden of persuasion and the claims should be passed to allowance.

II. The Office fails to consider rebuttal evidence for representative independent claims that the proposed combinations would render the references unsuitable for their intended purposes.

If the USPTO is deemed to have met, or partially met its burden of establishing a prima facie case of obviousness, the burden of coming forward with evidence or argument shifts to the applicant. In re Oetiker, 1445. After argument is submitted by the applicant in response, patentability is determined on the totality of the record, by a preponderance of evidence with due consideration to persuasiveness of argument. Id. The legal conclusion of obviousness is made de novo. In re Sullivan, 1350.

(a) The combination proposed to show representative Claims 1 and 11 obvious would improperly render the references unsuitable for their intended purposes.

Representative claims 1 and 11 stand rejected over the combination of Oace's electrical tape and Hughart's wallboard spacer. Appellant argued that Oace and Hughart were improperly combined, specifically that the USPTO failed to explain how the "apparently 0.5 inch spacer in Hughart

could be reduced by an order of magnitude to meet the 0.020 and 0.065 range claimed.” (A148). The examiner responded that Hughart was cited to show a polymer of an adhesive “tape” is known to have hardness near the upper end of the Shore A scale. (A239). The Board concluded that claim 1 was an obvious combination of the references because it would have been obvious to modify the Oace electrical tape to include the hardness recited by Hughart. (A10).

However, both the Board and examiner fail to discuss the impact of the modification on Oace’s electrical tape. In the Request for Rehearing, Applicant highlighted the detrimental effects of increased hardness on the admitted desirable elasticity characteristics described by Oace. (A256). Specifically, modifying the Oace tape “to provide for hardness imparted for structural strength” would render it unsatisfactory for its intended purpose. Oace describes, and the Decision acknowledges that one intended feature of Oace is to provide “a stretchable and elastic” tape. (A7). The intended purpose of stretchability and elasticity are typically associated with “softer” items (A256). Disregarding the express purpose, the Office proposes “hardening” the tape to the upper limits of the Shore A hardness scale, without comment on the adverse effects to the important stretch and elastic characteristics. (A256).

Thus, Appellant has shown that the proposed combination would have a detrimental effect on the references. Rendering the references unsuitable for their intended purposes is inimical to a legal conclusion of obviousness.

(b) The combination proposed to show Claim 12 obvious would improperly render the references unsuitable for their intended purposes.

Representative claim 12 stands rejected over the combination of Oace's electrical tape and Guenther's diaper tape. Appellant argued in its Appeal Brief that the references were improperly combined. In particular, Appellant noted that Guenther's backing was stretchable only by making incisions in the backing layer, while Oace described both elasticity and structural integrity as important. (A149-A150). The examiner ignored the problems with the combination and only responded that "Guenther was cited to show that the tape exhibits a peel adhesion" as claimed, and that Appellant failed to prove otherwise. (A240).

The Board concluded that it would have been obvious to modify Oace without any discussion regarding the effect the combination would have on the cited references. (A14). Further, the Board found that Guenther disclosed a second adhesive not relied upon by the examiner. Specifically, the examiner had relied on the "permanent" adhesive of Guenther in support of the peel adhesion limitation missing from Oace. (A240). The Board

made an additional finding of fact showing that Guenther also taught a less aggressive, “partially detackified,” removable adhesive. (A8).

In its Request for Rehearing, Appellant addressed the newly presented finding of two adhesives. Appellant noted that using either adhesive, the combination would render the references inoperable. (A257, 258). In particular, Oace’s electrical tape is intended to be wound upon itself in roll form on suitable cores. (A257). In use, the tape is pulled off the rolls by hand and wrapped onto a workpiece such as a wire splice. (A257). The adhesive is repeatedly described as “tacky,” but “eucohesive” meaning that the adhesive will not delaminate when unwound and handled. (A257).

Guenther describes a completely different adhesive that would destroy the features expressly described and claimed by Oace. Guenther describes its adhesive as “permanently” attaching the tape to the diaper, (A182, column 8, lines 3-8). It is the discussion of this permanent adhesive that the Office relied upon as disclosing the claimed peel adhesion limitations. (A237). To be sure, a permanent adhesive on Oace’s electrical tape would render it inoperable as a user would be unable to unroll the tape to apply to a workpiece. The Board attempts to remedy the failure of the proposed combination by citing to an alternative embodiment of a removable adhesive rendered “partially detackified.” (A8, paragraph 5). What is missing from

the alternative “partially detachified” embodiment however, is the peel adhesion claim limitation. In other words, the claim and Guenther’s permanently adhered embodiment are not intended to be easily removed. Thus, a relatively “strong” peel adhesion is described. Oace and Guenther’s alternate embodiment are intended to be user peelable, thus, have a relatively “weak” peel adhesion. To the extent Guenther discloses a strong peel adhesion, it destroys the obviousness rejection by rendering the primary Oace reference unsuitable for its intended use. To the extent Guenther discloses a weak peel adhesion, it destroys the obviousness rejection by not teaching each and every element.

The Board dodges the issues plaguing the combination and instead states that its affirmance is based on Appellant’s failure to identify error in the facts and reasons relied on by the examiner. (A20).

Accordingly, even if the USPTO is deemed to have met, or partially met its burden of establishing a prima facie case of obviousness with respect to representative claims 1, 11, or 12, Appellant has provided sufficient arguments to successfully rebut the legal conclusion.

Conclusion

The examiner and the Board have twice failed Mr. Goecke. In the first instance, they have stalled granting of his patent by stubbornly adhering to a prima facie case of obviousness that is unsupported by substantial evidence. In the second, they have used procedural dodges to ignore argument overcoming the legal conclusion.

Appellant respectfully requests this Court reverse the Board and order the application be allowed.

Respectfully Submitted,

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Addendum



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	29006-2	2438
21130 7590 02/19/2009 BENESCH, FRIEDLANDER, COPLAN & ARONOFF LLP ATTN: IP DEPARTMENT DOCKET CLERK 2300 BP TOWER 200 PUBLIC SQUARE CLEVELAND, OH 44114			EXAMINER DYH, RENA	
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The time period for reply, if any, is set in the attached communication.

UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS R. GOECKE

Appeal 2008-4501
Application 10/674,108
Technology Center 1700

Decided:¹ February 19, 2009

Before CATHERINE Q. TIMM, LINDA M. GAUDETTE, and
KAREN M. HASTINGS, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON APPEAL

This is an appeal from the final rejection of claims 1-7 and 9-12, the only claims pending in the Application. (Appeal Brief, filed March 19, 2007, ("Br.") 4 § III.) We have jurisdiction under 35 U.S.C. § 6(b).

We AFFIRM.

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

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Claim 1 is illustrative of the invention and is reproduced below:

1. An adhesive tape comprising:

a polymer layer having a Shore A Hardness of between about 92 and 100 and a substantially uniform thickness of between about 0.020" to 0.065"; and

a layer of adhesive attached to said polymer layer.

The Examiner relies on the following prior art references to show unpatentability (Examiner's Answer, mailed September 18, 2007, ("Ans.") 3 § (8)):

Oace	US 2,559,990	Jul. 10, 1951
Guenther	US 6,461,751 B1	Oct. 8, 2002
Hughart	US 6,668,504 B2	Dec. 30, 2003

Appellant requests review of the following grounds of rejection (Br. 5 § VI):

1. claims 1-6 and 9-10 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Hughart;

2. claim 12 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Guenther, and

3. claims 7, 10, and 11 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Hughart and Guenther (*see* Ans. 2, § (5) (correcting Appellant's statement of the grounds of rejection)).

ISSUE

Has Appellant shown that the Examiner reversibly erred in determining that it would have been obvious to one of ordinary skill in the

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art at the time of the invention to have combined the applied prior art in the manner claimed?

We answer this question in the negative as to each ground of rejection for essentially the reasons stated in the Examiner's Answer, which we explain in further detail below.

FINDINGS OF FACT

1. The present invention relates to an adhesive tape which is said to have superior ductility, strength, tear resistance, and abrasion resistance. (Spec. 1:7-8.) The tape is for use, for example, as floor marking in industrial and factory environments. (Spec. 1:10-11.) According to the Specification, a disadvantage of prior art tapes is that they "lack[] sufficient strength and hardness to prevent wearing, tearing, cracking and breakage from heavy and repeated traffic." (Spec. 1:11-13.) Another disadvantage is that they have poor adhesive quality, and tend to detach from repeated traffic (e.g., forklift trucks). (Spec. 1:14-15.)
2. Oace claims "[a] pressure-sensitive adhesive insulating tape . . . comprised of: a stretchable and elastic film backing having a thickness of 4 to 20 mils and formed of a homogeneous mixture primarily consisting of a stable blend of a film-forming polymer of monomers including at least a major proportion of vinyl chloride. . . ; and a . . . pressure-sensitive rubber-resin type adhesive coating united to the inner face of said film backing." (Oace, claim 1.)
3. Hughtart discloses the use of elastomeric strips for fastening a wall panel to wall studs, thereby providing a sound-deadened wall. (See

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- Hughart, claim 1.) The elastomeric strips may be made “of an elastomeric polymer, such as polyvinyl chloride having a hardness of Durometer 92 Shore A.” (Hughart, col. 2, ll. 42-43.) According to Hughart, “[a]ny suitable adhesive” may be used to adhere the elastomeric strips to the wall panels. (Hughart, col. 2, ll. 43-45.)
4. Guenther discloses a closure tape for an absorbent article comprising an essentially non-elastic backing material (Abstract) having a thickness of 50-500 μm and made from a polymer material such as polyvinyl chloride (col. 7, ll. 19-25). According to Guenther, the backing material bears an adhesive layer (col. 7, l. 27) which is preferably a pressure-sensitive adhesive, such as a rubber based adhesive (col. 8, ll. 37-38), exhibiting a 90° peel adhesion from a polyethylene surface of at least 3.5 N/cm (col. 8, ll. 11-16). The pressure-sensitive adhesive preferably exhibits a high value of static shear so that the tape does not inadvertently loosen. (See Guenther, col. 8, ll. 22-29.) The thickness of the adhesive layer is preferably between 20 and 100 μm . (Guenther, col. 8, ll. 50-52 and 63-65; col. 9, l. 66-col. 10, l. 1.)
 5. Guenther discloses that “the adhesion behavior of the adhesive . . . with respect to the target area \square is governed both by the nature of the adhesive and the surface properties of the target area” (col. 10, ll. 25-28). According to Guenther, “[w]hen using an appropriate release surface . . . it is often possible to use aggressive pressure-sensitive adhesives. . . . Alternatively, the pressure-sensitive adhesive . . . may be partially detackified to render it less aggressive and removable from the target area” (col. 10, ll. 36-43).

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Rejection of claims 1-6 and 9-10 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Hughart:

6. The Examiner relies on Oace for a disclosure of the invention as claimed in independent claim 1, with the exception of an express teaching that the backing film has a Shore A Hardness of 92-100.

The Examiner contends that

it would have been obvious to one having ordinary skill in the art to utilize Hughart's teaching of providing an adhesive tape backing of polyvinyl chloride having a Shore A Hardness of 92 in the invention of Oace with the motivation to provide for hardness imparted for structural strength to the tape.

(Ans. 3.)

7. Appellant does not dispute that Hughart discloses a polymer layer having the Shore A hardness recited in claim 1. (See Br. 8-9.) Nor does Appellant dispute the Examiner's contention that it would have been a matter of routine optimization to achieve a Shore A Hardness of 93-97, as recited in dependent claim 9 (Ans. 4). (See App. Br. 10.) However, Appellant argues that "as a whole, Hughart does not fairly suggest a polymer layer having the Shore A Hardness limitation missing from Oace" (Br. 8; *see also*, Br. 10 (relying on the same arguments in traversing the rejections of claims 5, 6, and 9)), because Hughart's elastomeric strips are "not an adhesive tape but instead a 'spacer' that is adapted to provide air gaps between the studs and the wall panel" (Br. 9). Appellants further argue that Hughart's elastomeric strips "appear to be about the thickness of the wall board"

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which is an order of magnitude greater than Appellants' claimed thickness. (Br. 9.)

8. With respect to dependent claim 2, Appellant concedes that Hughart discloses attaching the outermost side of the elastomeric strips to a wall panel. (App. Br. 9.) Appellant disputes the Examiner's contention that the "substrate" of appealed claim 2 reads on Hughart's wall panel (Ans. 3). (App. Br. 9.)
9. With respect to dependent claim 3, the Examiner finds that, in order to bond to the adhesive layer, Oace's backing would inherently possess the claim 3 "textured surface." (Ans. 4.) The Examiner also finds that Hughart's elastomeric strips include holes which provide a textured surface as claimed. (Ans. 7.) Appellant argues that "[t]here is no teaching of a 'textured surface' in either Oace or Hughart." (Br. 9.)

Rejection of claim 12 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Guenther and rejection of claims 7, 10, and 11 under 35 U.S.C. § 103(a) as unpatentable over Oace in view of Hughart and Guenther:

10. The Examiner maintains that Oace, as modified by Hughart, discloses the invention as claimed in independent claim 11 with the exception that the adhesive is a rubberized double-sided tape. (Ans. 6.) The Examiner contends that "it would have been obvious to one having ordinary skill in the art to utilize Guenther's teaching of using a double-sided rubberized pressure sensitive adhesive tape in the invention of Oace with the motivation to provide for enhancing its peel adhesion characteristics." (Ans. 6.)

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11. The Examiner relies on Oace for a disclosure of the invention as claimed in independent claim 12, with the exception of an express teaching that the adhesive layer has a peel adhesion of greater than 2.0 lb/in width. (Ans. 5.) The Examiner contends that one of ordinary skill in the art would have been motivated to provide Oace's adhesive layer with a peel adhesion of at least 3.5 N/cm (which includes Appellant's claimed range) based on the advantages disclosed by Guenther.
12. Appellant does not refute the Examiner's findings with respect to the teachings of Guenther. (See Br. 10-12.) Rather, Appellant contends that the Examiner's proposed motivation for combining the applied prior art is based on improper hindsight reasoning. (Br. 10 and 11.) Appellant points out that Guenther's backing layer is non-elastic and rendered stretchable by incisions (or slits). (Br. 10.) Appellant contends that use of this layer in Oace's tape "would seriously undermine" the desired elastic and insulating properties of Oace's tape. (Br. 11.)
13. Appellant further argues that the thickness of Guenther's polymer layer, which Appellant calculates as a maximum of "0.019685 inches" (Br. 11 n.1), is less than the range of "between 0.020 and 0.065" required by claims 7, 10, and 12 (Br. 11-12).

PRINCIPLES OF LAW

In making a patentability determination, analysis must begin with the question, "what is the invention claimed?" since "[c]laim interpretation, . . . will normally control the remainder of the decisional process." *Panduit Corp. v. Dennison Mfg. Co.*, 810 F.2d 1561, 1567-68 (Fed. Cir. 1987); see

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also, In re Self, 671 F.2d 1344, 1348 (CCPA 1982) (“Many of appellant’s arguments fail from the outset because, . . . they are not based on limitations appearing in the claims.”).

During examination, claims terms “must be given their broadest reasonable construction consistent with the specification.” *In re Icon Health and Fitness, Inc.*, 496 F.3d 1374, 1379 (Fed. Cir. 2007).

Two factors are considered in determining whether prior art is analogous: “(1) whether the art is from the same field of endeavor, regardless of the problem addressed, and (2) if the reference is not within the field of the inventor’s endeavor, whether the reference still is reasonably pertinent to the particular problem with which the inventor is involved.” *In re Clay*, 966 F.2d 656, 658-59 (Fed. Cir. 1992) (citations omitted).

“Whether a reference in the prior art is ‘analogous’ is a fact question.” *Id.* at 658. A reference is considered analogous art if “even though it may be in a different field from that of the inventor’s endeavor, it is one which, because of the matter with which it deals, logically would have commended itself to an inventor’s attention in considering his problem.” *Id.* at 659; *see also, KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, —, 127 S. Ct. 1727, 1742 (2007) (“[F]amiliar items may have obvious uses beyond their primary purposes.”); *In re Paulsen*, 30 F.3d 1475, 1481-82 (Fed. Cir. 1994) (determining that housings, hinges, latches, and springs found in items like a piano lid and kitchen cabinet were reasonably pertinent to the development of a latch system for personal computers); *Icon*, 496 F.3d at 1379-80 (determining that springs used in a folding bed were reasonably pertinent to an inventor developing a treadmill with a folding mechanism).

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When “the claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes, the PTO can require an applicant to prove that the prior art products do not necessarily or inherently possess the characteristics of his claimed product.” *In re Best*, 562 F.2d 1252, 1255-56 (CCPA 1977); *see also In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990) (“[W]hen the PTO shows sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.”).

ANALYSIS

Appellant first argues that Oace and Hughart are non-analogous art because they relate to insulation and protection of electrical conductors and to spacers separating wall boards from underlying wood studs. (Br. 8.) Contrary to Appellant’s contention, we find that the Examiner properly applied these references in rejecting the appealed claims since they are “reasonably pertinent to the particular problem with which the inventor is involved,” *Clay, supra*. In particular, both references are concerned with maintaining adherence of a tape to a substrate under conditions in which the tape may be subjected to forces or environmental conditions which reduce the adhesive properties of a pressure sensitive adhesive.

With respect to Appellant’s remaining arguments, we are not persuaded of reversible error on the part of the Examiner because Appellant (1) has not addressed the facts and reasons relied on by the Examiner in rejecting the claims and (2) relies on unclaimed features to distinguish over the applied prior art.

With respect to Appellant’s failure to address the Examiner’s contentions, we note that Appellant’s arguments focus on the differences

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between the claimed polymer layer and either Hughart's or Guenther's backing materials. For example, Appellant contends that substitution of Hughart's backing material for Oace's backing would not result in a polymer layer having the claimed thickness. However, the Examiner's rejections are not based on a determination that it would have been obvious to have substituted Oace's backing with Hughart's or Guenther's backing materials per se. Rather, the Examiner's rejection is based on a determination that it would have been obvious to have *modified* Oace's backing in view of Hughart or Guenther. Because Appellant did not address the Examiner's rationale for rejecting the claims, Appellant has not shown that the Examiner reversibly erred.

With respect to claim 3, we note that Oace's disclosure of a polymeric backing having an adhesive secured thereto, the same structural elements claimed by Appellant, gave the Examiner reason to believe that Oace's backing would inherently possess a textured surface as claimed in appealed claim 3. Appellant thus had the burden to establish the contrary, but did not provide evidence to refute the Examiner's finding.

Appellant also argues that several inventive features are not disclosed or suggested by the Examiner's proposed combination of references. However, Appellant has not identified reversible error in the Examiner's determination that the claims, as drafted, do not recite these argued features. For example, Appellant has not identified any language in the Specification or claims which warrants a narrow interpretation of the claim 2 term "substrate" as excluding Hughart's wall board.

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CONCLUSION

Appellant has not identified reversible error in the Examiner's obviousness determination. The decision of the Examiner rejecting claims 1-7 and 9-12 is affirmed.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a)(1)(iv).

AFFIRMED

PL Initial:
sld

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10/674,108	09/29/2003	Thomas R. Goerke	29006-2	2438
86625 7590 07/16/2009 Brennan, Manna & Diamond, LLC The Carnegie Building 75 East Market Street Akron, OH 44308			EXAMINER DYE, RENA	
			ART UNIT	PAPER NUMBER
			1794	
			MAIL DATE	DELIVERY MODE
			07/16/2009	PAPER

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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte THOMAS R. GOECKE

Appeal 2008-004501
Application 10/674,108
Technology Center 1700

Decided:¹ July 16, 2009

Before CATHERINE Q. TIMM, LINDA M. GAUDETTE, and
KAREN M. HASTINGS, *Administrative Patent Judges*.

GAUDETTE, *Administrative Patent Judge*.

DECISION ON REQUEST FOR REHEARING

Appellant requests reconsideration of our Decision of February 19, 2009 ("Decision") wherein we sustained the Examiner's rejections of the appealed claims under 35 U.S.C. § 103(a). (Request for Rehearing ("Req.")).

¹ The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the decided date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

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filed Apr. 23, 2009.) Appellant contends that the Board erred in its Decision for the following reasons (hereinafter "Reasons"):

1. neither the Examiner nor the Board identified a disclosure or suggestion in the applied prior art of the polymer plus adhesive thickness of .065-.069 inch recited in claim 11 (Req. 2-3);

2. the Examiner and the Board incorrectly found that the slight overlap between Oace's disclosed thickness range of .004 to .020 inches and the range of .020 to .065 inches recited in claims 1 and 12 was sufficient to establish an anticipation of the claimed range (Req. 3-4);

3. the Examiner and the Board overlooked the fact that modification of Oace's tape to increase its hardness to the claimed Shore A Hardness range would render the tape inelastic and, therefore, unsatisfactory for its intended purpose (Req. 5-6 (discussing claims 1-7 and 9-11));

4. the Examiner and the Board overlooked the fact that modification of Oace's adhesive layer based on Guenther's disclosure would render Oace's tape unsatisfactory for its intended purpose since Guenther relates to a permanent adhesive (Req. 6-7 (discussing claim 12); and

5. the Board relied on a different embodiment in Guenther than the Examiner, and modification of Oace's adhesive in view of this embodiment would have resulted in a combination which fails to include all of the limitations recited in claim 12 (Req. 6-7).

We have reviewed our Decision in light of the arguments presented by Appellant in the Request. However, we are not persuaded that our Decision was in error.

Appellant has the burden on appeal to the Board to demonstrate error in the Examiner's position. *See In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir.

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2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of prima facie obviousness or by rebutting the prima facie case with evidence of secondary indicia of nonobviousness." (quoting *In re Rouffet*, 149 F.3d 1350, 1355 (Fed. Cir. 1998))). Therefore, we look to Appellant's Brief to show error in the proffered prima facie case. See 37 C.F.R. § 41.37(c)(1)(vii) ("Any argument or authorities not included in the brief or a reply brief filed pursuant to § 41.41 will be refused consideration by the Board, unless good cause is shown."). With respect to a Request for Rehearing of the Board's Decision, 37 C.F.R. § 41.52(a)(1) provides that an Appellant must "state with particularity the points believed to have been misapprehended or overlooked by the Board in its Decision." This section further states that "[a]rguments not raised in the briefs before the Board and evidence not previously relied upon in the brief and any reply brief(s) are not permitted in the request for rehearing." *Id.*

Appellant's Reasons 1-4 contain arguments which were not previously raised in Appellant's Appeal Brief. In other words, because these arguments were not previously before the Board, it is improper for Appellant to identify these Reasons as "points believed to have been misapprehended or overlooked by the Board in its Decision" (37 C.F.R. § 41.52(a)(1)). However, while these arguments will not be addressed on the merits, we do point out at least the following inaccuracies in Appellant's Reasons:

Turning first to Reason 1, Appellant is directed to Findings of Fact ("FF") 6, 7, and 10 of the Decision which clearly identify Oace as teaching the recited thickness limitation. In the Appeal Brief, Appellant did not (see Decision 10), nor does he currently (see Req. 4), dispute the Examiner's

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finding that the thickness of Oace's tape overlaps Appellant's claimed range. With respect to Reason 2, we note that the claims were rejected under 35 U.S.C. § 103, not under 35 U.S.C. § 102. Our reviewing court has consistently held that a prima facie case of obviousness exists where the prior art and claimed ranges overlap, as well as in those cases where the claimed range and the prior art range, though not overlapping, are sufficiently close that one skilled in the art would have expected them to have the same properties. *See, e.g., In re Peterson*, 315 F.3d 1325, 1329 (Fed. Cir. 2003); *In re Geisler*, 116 F.3d 1465, 1469 (Fed. Cir. 1997); *In re Woodruff*, 919 F.2d 1575, 1578 (Fed. Cir. 1990); *Titanium Metals Corp. v. Banner*, 778 F.2d 775, 783 (Fed. Cir. 1985). Turning to Reasons 3 and 4, Appellant is directed to FF 12 which indicates that the Board considered a related issue raised in the Appeal Brief, but determined that it was not persuasive of reversible error (*see* FF 11 and Decision 10 (explaining that "Appellant did not address the Examiner's rationale for rejecting the claims")). However, Appellant has not identified, nor do we find, where the arguments contained in Reasons 3 and 4 were previously presented in the Appeal Brief.

Turning now to Reason 5, Appellant is directed to FF 4 which lists the factual findings relied on by the Examiner in rejecting claim 12 (*see* Ans. 4). Appellant is further directed to the Analysis portion of the Decision (pp. 9-10) which clearly indicates that the Board's affirmance is based on Appellant's failure to identify error in the facts and reasons relied on by the Examiner in rejecting the claims.

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In conclusion, based on the foregoing, we have granted Appellant's request to the extent that we have reconsidered our Decision, but we deny Appellant's request to make any change therein.

No time period for taking any subsequent action in connection with this appeal may be extended under 37 C.F.R. § 1.136(a).

DENIED

PL Initial:
sld

BENESCH, FRIEDLANDER, COPLAN
& ARONOFF LLP
ATTN: IP DEPARTMENT DOCKET CLERK
2300 BP TOWER
200 PUBLIC SQUARE
CLEVELAND, OH 44114

Certificate of Filing and Service

I hereby certify that on this 28th day of December, 2009, two bound copies of the Brief of Appellant were served via U.S. Mail, postage prepaid, to the following:

Raymond T. Chen
Sydney O. Johnson, Jr.
Christina J. Hieber
PATENT & TRADEMARK OFFICE
Post Office Box 15667
Arlington, Virginia 22215
(571) 272-9035

Counsel for Appellee

I further certify that on this 28th day of December, 2008, the required number of copies of the Brief of Appellant were hand filed at the Office of the Clerk, United States Court of Appeals for the Federal Circuit.

The necessary filing and service were performed in accordance with the instructions given me by counsel in this case.

THE LEX GROUP^{DC}
1750 K Street, N.W., Suite 475
Washington, DC 20006
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Certificate of Compliance

Pursuant to Federal Circuit Rule 28(a)(14) and Federal Rule of Appellate Procedure 32(a)(7)(C), counsel for Appellant hereby certifies that the foregoing Brief of Appellant complies with the type-volume limitation proscribed in Federal Rule of Appellate Procedure 32(a)(7)(B) and was prepared using the following:

Microsoft Word 2000;

Times New Roman;

14 point typeface.

Appellant's counsel has relied on the word count function of the word-processing program used to prepare this Brief of Appellant, which indicates that this brief contains 4,250 words, excluding the parts exempted by Federal Rule of Appellate Procedure 32(a)(7)(B)(iii) and Federal Circuit Rule 32(b).

Respectfully Submitted,

W. Scott Harders
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75 East Market Street
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Counsel for Appellant

Dated: December 28, 2009

**Declaration of Authority
Pursuant to Fed. Cir. R. 47.3(d)**

I, Teodora I. Mihaylova, hereby declare under penalty of perjury that I am duly authorized to sign on behalf of Counsel for Appellant, W. Scott Harders, as he is unavailable to do so himself.

Executed: December 28, 2009

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674.108	09/29/2003	Thomas R. Goecke	5923.0001	2438

86625	75%	08/23/2010
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Brennan, Manna & Diamond, LLC
 The Carnegie Building
 75 East Market Street
 Akron, OH 44308

EXAMINER	
NORDMEYER, PATRICIA L	

ART UNIT	PAPER NUMBER
1783	

NOTIFICATION DATE	DELIVERY MODE
08/23/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@bmdllc.com
 wsharders@bmdllc.com
 jaruller@bmdllc.com

Office Action Summary	Application No.	Applicant(s)	
	10/674,108	GOECKE, THOMAS R.	
	Examiner	Art Unit	
	Patricia L. Nordmeyer	1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
 - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
 - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 15 June 2010.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date. _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Reopening of Prosecution

In view of the remand filed on May 6, 2010, PROSECUTION IS HEREBY REOPENED. Upon further reconsideration of the applied prior art and arguments of record, all rejections of record as set forth in the Non-final rejection dated October 19, 2006 are hereby withdrawn. As new prior art has been found and claims furthered analyzed, new rejections have been applied below.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 – 7, 9 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 contains the limitation of “substantially uniform,” which is not supported by the specification. The specification is silent with regard to the thickness being uniform. However, the specification does state that the polymer layer contains a textured surface. It is unclear how the polymer layer contains both a substantially uniform thickness and a textured surface.

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Claims 2 – 7, 9 and 10 are also rejected under 35 U.S.C. 112 1st paragraph due to their dependency on the above rejected claim.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 – 7, 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "substantially uniform" in claim 1 is unclear, which renders the claim vague and indefinite. Claim 1 states that the thickness of the polymer layer is substantially uniform; while claim 3 states that the polymer layer has a textured surface. How can the polymer layer have a uniform thickness while having a textured surface?

Claims 2 – 7, 9 and 10 are also rejected under 35 U.S.C. 112 2nd paragraph due to their dependency on the above rejected claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by DeRusha et al. (USPN 4,484,574).

DeRusha et al. discloses an adhesive tape (Abstract) comprising: a polymer layer having a thickness between 0.031" and 0.236" (Column 2, lines 14 – 23), the polymer layer defining a first side (Figure 1, #16); and a double sided adhesive layer where one side of the double sided adhesive layer¹ is in substantially continuous contact with the first side of the polymer layer (Figure 1, #12) and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment (Column 3, lines 28 – 52; Figure 1, #12, wherein the adhesive can attach to any substrate surface, Column 5, lines 1 – 5); where the adhesive tape has a peel adhesion of 250 g/cm to 850 g/cm width, which meets the limitation of a peel adhesion greater than 2.0 lb/in width (2.0 lb/in width converts to 357 g/cm width) (Column 3, lines 41 – 52) as in claim 12.

.....As to the limitation of "adhesive layer is disposed to adhere to the flooring environment", the term disposed, as defined by Merriam-Webster's, means "to give a tendency to". Since the adhesive tape of DeRusha et al. meets the claim limitations, it would be capable of, or disposed to, adhere to a flooring environment.

¹ The Examiner notes that any layer of adhesive has two sides, each side having adhesive properties. Therefore, the reference's disclosure of a layer of adhesive anticipates the claim limitation of a double sided adhesive layer.

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Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 – 3, 5, 7 and 9 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston et al. (USPN 3,895,153).

Independent claims 1 and 11 will be addressed first.

As to claim 1, Johnston et al. discloses an adhesive article that can be formed into any shape, (Abstract; Column 8, lines 16 - 20) comprising a polymer layer having a Shore A Hardness of between about 60 and 95 (Figure 4, #18; Column 4, lines 51 – 55) and a substantially uniform thickness of 10 to 60 mils or 0.010" to 0.060" (Figure 4, #18; Column 5, lines 48 – 52); and a layer of adhesive attached to said polymer layer (Figure 6, #38).

As to claim 11, Johnston et al. also disclose an adhesive tape that can be cut into any shape including a narrow strip or band, (Abstract; Column 8, lines 16 - 20) comprising: a polymer layer having a Shore A Hardness of between about 60 and 95 (Column 4, lines 51 – 55); and a layer of pressure sensitive adhesive comprising a first side and an opposed second side (Figure 6, #38), the first side being in direct and uninterrupted contact with the polymer layer (Figure 6, #38) where the adhesive tape comprises an average thickness between 13.5 and 78 mils, since the backing sheet has a thickness of 1 to 5 mils (Column 4, lines 29 – 31) in combination with the primer layer having a thickness of 0.5 to 3 mils (Column 4, lines 45 – 47),

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the copolymer layer having a thickness of 10 to 60 mils (Column 5, lines 48 – 52) and the adhesive layer having a thickness of 2 to 10 mils (Column 6, lines 11 – 13).

Johnston et al. differs from claims 1 and 11 in two ways. First, Johnston et al. fails to disclose an anticipatory example, or ranges that are sufficiently specific to anticipate the ranges of Shore A Hardness (claims 1 and 11), polymer layer thickness (claim 1) or overall tape thickness (claim 11). However, Johnson et al. teaches a range of Shore A Hardness of between about 60 and 95 (Column 4, lines 51-55) which overlaps the claim 1 and 11 range of between about 92 and 100. Johnston et al. teaches a polymer layer thickness of 0.010 to 0.060" which overlaps the claim 1 range of between about 0.020 and 0.065". Lastly, Johnston et al. teaches an overall thickness of 13.5 to 78 mils which overlaps the claim 11 range of between about 65 and 69 mils. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art to have selected from the overlapping portion of the ranges of Shore A Hardness and thickness taught by Johnston et al. because overlapping ranges have been held to establish *prima facie* obviousness.

Second, Johnson et al. fail to specifically refer to its article as being an "adhesive tape." Johnston et al. teaches that the article can be formed into any shape, (Abstract; Column 8, lines 16 - 20). The term "tape," as defined by Merriam-Webster's, means "a narrow flexible strip or band." And, it is well settled that a particular shape of a prior invention carries no patentable weight unless the applicant can demonstrate that the new shape provides significant unforeseen improvements to the invention. In the instant case, the application does not indicate any new,

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significant attributes of the invention due to its shape which would have been unforeseen to one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to change the shape to change the shape of the adhesive article to be in the form of a narrow strip or band. One skilled in the art would have been motivated to do so in order to change the appearance of the adhesive article. MPEP 2144.04 IV.

With regard to claim 2, the article contains a substrate attached to an outermost side of said layer of adhesive (Figure 6, # 39).

For claim 3, the polymer layer includes a textured surface (Figure 4, #18).

Regarding claim 5, the polymer layer includes coloring pigment (Column 5, lines 38 – 48).

As in claim 7, the adhesive comprises a rubberized double-sided tape (Column 3, lines 43 – 49, since the adhesive has adhesive qualities on the opposite sides of the layer, it reads upon a double side adhesive product).

With regard to claim 9, polymer layer has a Shore A Hardness of between about 60 and 95, thereby meeting the limitation of a Shore A Hardness of 93 and 97 (Column 4, lines 51 – 55).

For claim 10, the adhesive is pressure sensitive (Column 5, lines 67 – 69).

9. Claims 1 – 6, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reeves et al. (USPN 5,508,084).

Reeves et al. discloses a repositionable article that can be cut into any shape, (Column 7, lines 34 – 36) comprising a polymer layer (Figure 2d. #19; Column 10, lines 21 – 29) having a

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Shore A Hardness of between about 70 and 140 (Column 14, lines 25 – 29) and a substantially uniform thickness of between about 0.020" to 0.065" (Column 10, lines 30 – 35) and a layer of adhesive attached to said polymer layer (Figure 2d, #13; Column 12, lines 30 – 44).

Reeves et al. differs from claim 1 in two ways. First, Reeves et al. fails to disclose an anticipatory example, or ranges that are sufficiently specific to anticipate the claim 1 range of Shore A Hardness. However, Johnson et al. teaches a range of Shore A Hardness of between about 70 and 140 (Column 14, lines 25 – 29) which overlaps the claim 1 range. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art to have selected from the overlapping portion of the ranges of Shore A Hardness taught by Reeves et al. because overlapping ranges have been held to establish *prima facie* obviousness.

Second, Reeves et al. fails to specifically refer to its article as being an "adhesive tape." Reeves et al. teaches that the article can be formed into any shape, (Column 7, lines 34 – 36). The term "tape," as defined by Merriam-Webster's, means "a narrow flexible strip or band." It is well settled that a particular shape of a prior invention carries no patentable weight unless the applicant can demonstrate that the new shape provides significant unforeseen improvements to the invention. In the instant case, the application does not indicate any new, significant attributes of the invention due to its shape which would have been unforeseen to one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to change the shape to change the shape of the adhesive article to be in the form of a

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narrow strip or band. One skilled in the art would have been motivated to do so in order to change the appearance of the adhesive article. MPEP 2144.04 IV.

With regard to claim 2, the article contains a substrate attached to an outermost side of said layer of adhesive (Column 13, lines 10 – 15).

For claim 3, the polymer layer includes a textured surface (Figure 2d; Column 12, lines 16 – 23).

With regard to claim 4, the polymer layer is comprised of a polyvinyl chloride (Column 13, lines 28 – 36).

Regarding claim 5, the polymer layer includes coloring pigment (Column 12, lines 25 – 31).

As in claim 6, the polyvinyl chloride comprises a clear polymer (Column 12, lines 25 – 31).

With regard to claim 9, polymer layer has a Shore A Hardness of between about 70 and 140, which overlaps the limitation of a Shore A Hardness of 93 and 97 (Column 14, lines 25 – 29).

For claim 10, the adhesive is pressure sensitive (Column 8, lines 9 – 13). However, Reeves et al. fail to disclose that the adhesive article is specifically an adhesive tape.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hornibrook et al. (USPN 4,248,762).

Hornibrook et al. disclose a pressure sensitive product (Column 1, lines 10 – 13) comprising: a polymer layer having a thickness between 0.002" and 0.020", thereby overlapping

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the thickness limitation of 0.020" and 0.065" (Column 2, lines 1 – 15), the polymer layer defining a first side (Figure 1, #1); and a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer (Column 2, lines 16 – 39; Figure 2, #2) and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment (Column 2, lines 16 – 39; Figure 2, #2); where the adhesive tape has a peel adhesion of 7.5 pounds per linear inch, which meets the limitations of a peel adhesion greater than 2.0 lb/in width (Column 5, lines 1 – 3) as in claim 12.

Hornibrook et al. differs from claim 12 in two ways. First, Hornibrook et al. fails to disclose an anticipatory example, or ranges that are sufficiently specific to anticipate the claim 12 range of thickness of 0.020 to 0.065". However, Hornibrook et al. teaches a range of thickness of 0.002" and 0.020" (Column 2, lines 1 – 15), which overlaps the claim 12 range of between 0.020 and 0.065". Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art to have selected from the overlapping portion of the ranges of Shore A Hardness taught by Reeves et al. because overlapping ranges have been held to establish *prima facie* obviousness.

Second, Hornibrook et al. fail to disclose that the adhesive article is specifically an adhesive tape.

The term tape, as defined by Merriam-Webster's, means "a narrow flexible strip or band". It is well settled that a particular shape of a prior invention carries no patentable weight unless the applicant can demonstrate that the new shape provides significant unforeseen

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improvements to the invention. In the instant case, the application does not indicate any new, significant attributes of the invention due to its shape which would have been unforeseen to one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to change the shape of the adhesive article to be in the form of a narrow strip or band. One skilled in the art would have been motivated to do so in order to change the appearance of the adhesive article. MPEP 2144.04 IV.

As to the limitation of "adhesive layer is disposed to adhere to the flooring environment", the term disposed, as defined by Merriam-Webster's, means "to give a tendency to". Since the adhesive product of Hornibrook et al. meets the claim limitations, it would be capable of, or disposed to, adhere to a flooring environment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Nordmeyer whose telephone number is (571)272-1496. The examiner can normally be reached on Mon.-Fri. from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia L. Nordmeyer
Primary Examiner
Art Unit 1783

/Patricia L. Nordmeyer/
Primary Examiner, Art Unit 1783

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1783

/Sharon A. Gibson/
Director, Technology Center 1700

Notice of References Cited

Application/Control No.

10/674,108

Applicant(s)/Patent Under
Reexamination
GOECKE, THOMAS R.

Examiner

Patricia L. Nordmeyer

Art Unit

1783

Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-3,895,153	07-1975	Johnston et al.	428/141
*	B	US-4,248,762	02-1981	Hornibrook et al.	524/441
*	C	US-4,484,574	11-1984	DeRusha et al.	602/75
*	D	US-5,508,084	04-1996	Reeves et al.	428/172
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Merriam-Webster's Collegiate Dictionary, 1996, Merriam-Webster, Incorporated, Tenth Edition, pages 335 and 1205.
	V	
	W	
	X	

A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	2	((THOMAS) near2 (GOECKE)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/22 15:14
S2	14	("5061559" "5246773" "5496636" "6036997" "6245382" "6277468" "6509084").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:20
S3	17285	(428/40.1,40.8,41.6,42.1,141,174,332,337,343,906).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:30
S5	342	S3 and (shore with hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:37
S6	248	S3 and (shore with a with hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:37
S7	175	S6 and adhesive\$1 and thick\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:38
S8	1299	adhesive\$1 and tape\$1 and (shore adj a adj hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 16:40

S9	1142	S8 and thick\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 16:41
S10	100	adhesive\$1 and (tape\$1 same (shore adj a adj hardness))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 16:45
S11	0	tape\$1.clms.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:23
S12	0	tape\$1.clms.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:23
S13	625	(adhesive\$1 with tape\$1) and (shore adj a adj hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:25
S14	15477	floor same tape\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:26
S15	40	S14 and adhesive\$1 and (shore adj a adj hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:27
S16	2	("6668501").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:39

S17	2	("6668504").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:40
S18	1004	adhesive\$1 and (polymer\$1 same (shore adj a adj hardness))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 11:17
S19	2	("6726971").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 15:25
S20	4000	((peel with adhesion) and adhesive\$1 and thick\$4 and tape\$1 and polymer\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 17:03
S22	1777	((peel with adhesion) same tape\$1) and adhesive\$1 and thick\$4 and polymer\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 17:04

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<i>Index of Claims</i> 	Application/Control No. 10674108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.
	Examiner Patricia L Nordmeyer	Art Unit 1783

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant		<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47			
CLAIM		DATE							
Final	Original	07/27/2010							
	1	✓							
	2	✓							
	3	✓							
	4	✓							
	5	✓							
	6	✓							
	7	✓							
	8	-							
	9	✓							
	10	✓							
	11	✓							
	12	✓							

Search Notes 	Application/Control No. 10674108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.
	Examiner Patricia L Nordmeyer	Art Unit 1783

SEARCHED			
Class	Subclass	Date	Examiner
428	40.1, 40.8, 41.6, 42.1, 141, 174, 332, 337, 343, 906	7/22/10	pln

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor search	7/22/10	pln
East word and class search	7/22/10	pln

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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10674108	CTNF	08/23/2010	5923.0001
	892	08/23/2010	5923.0001

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	5923.0001	2438

86625	755/0	11/29/2010
Brennan, Manna & Diamond, LLC		
The Carnegie Building		
75 East Market Street		
Akron, OH 44308		

EXAMINER	
NORDMEYER, PATRICIA L.	

ART UNIT	PAPER NUMBER
1788	

NOTIFICATION DATE	DELIVERY MODE
11/29/2010	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@bmdllc.com
 wsharders@bmdllc.com
 jaruller@bmdllc.com

Interview Summary	Application No.		Applicant(s)	
	10/674,108		GOECKE, THOMAS R.	
	Examiner		Art Unit	
	PATRICIA L. NORDMEYER		1788	

All participants (applicant, applicant's representative, PTO personnel):

(1) PATRICIA L. NORDMEYER. (3) _____.

(2) Scott Harders. (4) _____.

Date of Interview: 23 November 2010.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.
If Yes, brief description: _____.

Claim(s) discussed: All.

Identification of prior art discussed: DeRusha et al.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Mr. Harders and the Examiner discussed the prior art with regard to the current claim limitations. The Examiner suggested looking at the specification to see if there any limitations that can be added to claims to overcome the prior art.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Patricia L. Nordmeyer/ Primary Examiner, Art Unit 1788	
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Summary of Record of Interview Requirements

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

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Application	Document	Mailroom Date	Attorney Docket No.
10674108	EXIN	11/29/2010	5923.0001

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IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Thomas R. Goecke Examiner : Patricia L. Nordmeyer

Application No. : 10/674,108 Group Art : 1783

Filing Date : 29 September 2003 Docket No. : 5923.0001

Confirmation No. : 2438

Title: Adhesive Tape

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT C AND RESPONSE TO OFFICE ACTION

Dear Examiner:

This is in response to the Office Action dated August 23, 2010, issued in connection with the above-referenced application (hereafter "Office Action"). The Office Action set a three-month statutory period to respond. This Response to Office Action, mailed or electronically filed via the EFS system on November 23, 2010 with a certificate of mailing or transmission, is thus, timely filed.

IN THE CLAIMS:

1. (Previously presented) An adhesive tape comprising:

a polymer having a Shore A Hardness of between 92 and 100 and a substantially uniform thickness of between about 0.020" to 0.065"; and

a layer of adhesive attached to said polymer layer.
2. (Previously presented) The adhesive tape of claim 1, further comprising a substrate attached to an outermost side of said layer of adhesive.
3. (original) The adhesive tape claim of claim 1, wherein said polymer layer includes a textured surface.
4. (original) The adhesive tape of claim 1, wherein said polymer layer is comprised of a polyvinyl chloride.
5. (original) The adhesive tape of claim 1, wherein said polymer layer includes coloring pigment.
6. (original) The adhesive tape of claim 4, wherein said polyvinyl chloride comprises a clear polymer.
7. (Previously presented) The adhesive tape of claim 1, wherein said adhesive comprises a rubberized double-sided tape.
8. (cancelled)
9. (Previously presented) The adhesive tape of claim 1, the adhesive tape claim of claim 1, wherein said polymer layer has a Shore A Hardness of between about 93 and 97.

Our Docket No.: 5923.0001
Serial No.: 10/674,108

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10. (original) The adhesive tape of claim 1, wherein said adhesive is pressure sensitive.

11. (Previously presented) An adhesive tape comprising:

a polymer having a Shore A Hardness of between 92 and 100; and

a layer of pressure sensitive adhesive comprising a first side and an opposed second side, the first side being in direct and uninterrupted contact with the polymer layer where the adhesive tape comprises an average thickness between 65 mil and 69 mil.

12. (Previously presented) An adhesive tape for application to a flooring environment comprising:

a polymer layer having a thickness between 0.020" and 0.065", the polymer layer defining a first side; and

a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment;

where the adhesive tape has a peel adhesion greater than 2.0 lb/in width.

13. (New) The adhesive tape as set forth in claim 12, where the peel adhesion is measured under a test method including peeling the tape at a 90 degree angle after application to a stainless steel panel.

14. (New) The adhesive tape of claim 1, where the adhesive tape comprises a peel adhesion greater than 2.0 lb/in width when peeled at a 90 degree angle under a

Our Docket No.: 5923.0001

Serial No.: 10/674,108

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modified PSTC-101 method where the modified PSTC-101 method comprises a dwell time of one hour.

REMARKS

Applicant wishes to thank the Examiner for the consideration given this case to date. Applicant has now had an opportunity to carefully consider the Examiner's action, and respectfully submits that the application, as amended, is now in condition for allowance. As examined, Claims 1-7 and 9-12 were pending. As amended, Claims 1-7 and 9-12 remain pending and new claims 13 and 14 have been added. No new matter is believed introduced.

THE EXAMINER'S ACTION

In the Office Action, the Examiner:

1) rejected claims 1-7, 9 and 10 under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement.

2) rejected claims 1-7, 9 and 10 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

3) rejected claim 12 under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 4,484,574 to DeRusha et. al. ("DeRusha"); and

4) rejected claims 1-3, 5, 7 and 9-11 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 3,895,153 to Johnston et al. ("Johnston").

5) rejected claims 1-6 and 10 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,508,084 to Reeves et al. ("Reeves").

6) rejected claim 12 under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 4,248,762 to Hornibrook et al. ("Hornibrook").

REJECTIONS UNDER 35 U.S.C. § 112, FIRST PARAGRAPH

The Office now asserts that the specification does not reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed, had possession of the claimed invention. Specifically, the Office contends that the term "substantially uniform" is not supported by the specification. Office Action p. 2. Further the Office questions different claims and disclosures that call for

"substantially uniform thickness" on one hand and "a textured surface" on the other hand. Id.

The written description requirement of 35 U.S.C. §112, first paragraph requires the application to "convey with reasonable clarity to those skilled in the art that, as of the filing date sought, the applicant was in possession of the invention." Vas-Cath Inc. v. Mahurkar, 935 F.2d 1555, 1563-64 (Fed. Cir. 1991). The claimed subject matter need not be identically described in the specification in order to satisfy the written description requirement. In re Wright, 866 F.2d 422, 425. Indeed, the drawings alone may provide a sufficient description. Vas-Cath, at 1564. The test "is whether a person of ordinary skill in the art would recognize that the applicant possessed what is claimed" Noelle v. Lederman, 355 F.3d 1343, 1348 (Fed. Cir. 2004), and Examiners are assumed to be familiar with the level of skill in the art. Am. Hoist & Derrick Co. v. Sowa & Sons, 725 F.2d 1350, 1359 (Fed. Cir. 1984).

Initially, Applicant notes that the claimed language has been pending for more than 5 years. In this time, it has been considered by a prior examiner, a panel of 3 examiners sitting as pre-appeal conferees, a panel of 3 Administrative Law Judges considering a fully briefed and answered appeal to the Board of Patent Appeals and Interferences, and attorneys in the Solicitors Office. None of these Office personnel have raised the concern that a person of ordinary skill in the art would NOT recognize that applicant possessed the "substantially uniform" polymer layer claimed. This is particularly relevant because Examiners are assumed to be familiar from their work with the level of skill in the art. Am. Hoist. While it is beyond reasonable dispute that the rejection is not timely, it is also inappropriate because prior Examiners familiar with the level of skill in the art and claim language appear to have recognized that the applicant possessed what is claimed.

Substantively, to assess whether a person of ordinary skill in the art would recognize that the applicant possessed what is claimed, applicant notes that the

claim is more specific than the questioned "substantially uniform" language. The substantially uniform thickness of the polymer layer may be defined by claim 1 itself, in that the claim calls for, among others, a "substantially uniform thickness of between about 0.020" and 0.065"...." In other words, this portion of the claim is self defining – substantially uniform means between about the forty-five thousandths of an inch range claimed.

Additionally, Applicant submits the Declaration of Joseph T. Mausar Under 37 C.F.R. 1.132 (filed herewith). Mr. Mausar reviewed the specification and figure and concluded that the statements in the specification at page 4 (relating to textured extruded polymer layer), page 5 (relating to thickness testing), and page 7 (charting the thickness testing results) when taken together with the Figure disclose that an artisan would recognize that the applicant possessed the claimed "substantially uniform" but textured polymer layer. Mausar Decl. ¶ 15.

Thus, a person of ordinary skill in the art would recognize that the applicant possessed what is claimed, satisfying §112, first paragraph.

REJECTIONS UNDER 35 U.S.C. § 112, SECOND PARAGRAPH

The Office finds the phrase "substantially uniform" in claim 1 unclear, which is said to render that the claim and those depending therefrom unpatentably indefinite. The Office asks rhetorically how can a polymer layer have a uniform thickness while having a textured surface? Office Action p. 3.

Claims are considered indefinite under the second paragraph of 35 U.S.C. § 112 when they are not amenable to construction or are insolubly ambiguous. Hearing Components, Inc. v. Shure Inc., 600 F.3d 1357, 1366 (Fed. Cir. 2010). Thus, the definiteness of claim terms depends on whether those terms can be given any reasonable meaning. Datamize, LLC v. Plumtree Software, Inc., 417 F.3d 1342, 1347 (Fed. Cir. 2005). If the meaning of a claim term is discernible, even though the conclusion may be one over which reasonable persons will disagree, the claim satisfies the definiteness requirements of 35 U.S.C §112, second paragraph. Id.

Claim 1 calls for, among others, a "substantially uniform thickness of between about 0.020" to 0.065"...." The claim thus clearly defines the "substantially uniform thickness" as being about 0.020" to 0.065". As to the question of how the polymer layer can have, at once, both a "substantially uniform thickness" and a "textured surface," Applicant notes that the plain meaning of the claim language merely requires that the "substantially uniform thickness" be between about 0.020" to 0.065". Thus, a thickness - textured or otherwise - in the range meets the claim language.

Because the claim term, "substantially uniform," can be given reasonable meaning in the context of claim 1, even if reasonable persons may disagree, the term meets the definiteness requirements of 35 U.S.C. §112, second paragraph.

REJECTIONS UNDER 35 U.S.C. § 102(b)

The Office contends that DeRusha anticipates claim 12. Office Action p. 4. However, the Examiner will appreciate that "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131. The identical invention must be shown in as complete detail as is contained in the claim. Id.; citing Richardson v. Suzuki Motor Co., 868 F. 2d 1226, 1236 (Fed. Cir. 1989). Moreover, the elements must be arranged as required by the claim. Id., citing In re Bond, 910 F. 2d 831 (Fed. Cir. 1990).

DeRusha Fails to Disclose Application to a Flooring Environment

Claim 12 calls for "An adhesive tape for application to a flooring environment" and an "adhesive layer disposed to adhere to the flooring environment...." (emphasis supplied).

DeRusha completely fails to disclose its tape on "a flooring environment." The Office attempts to remedy this clear deficiency by observing that the "adhesive can attach to any substrate surface." Office Action, p.4. However, the passage cited by the Office in support merely notes that "[t]he resulting tape...adheres strongly,

but releasably to virtually any clean, dry surface including glass, metal, fabric, plaster casts and human skin." DeRusha, Column 5, lines 1-5 (emphasis added). This use of the phrase "virtually any" in the passage cannot be said to disclose the identical invention in as complete detail as required to support the rejection.

Moreover, the entire teaching of DeRusha repeatedly and exclusively discloses its tape as "wrapping" around its application area. For example DeRusha describes: (i) "the invention" as relating to a foam tape which may be used as a bandage hold down or athletic wrap. Column 1, lines 6 and 7 (emphasis supplied); (ii) the invention as particularly suitable for athletic applications where some flexibility of the wrapped member is desired. Column 2, lines 25 - 27 (emphasis supplied); (iii) the tape as useful to wrap around the limb of a mammal. Column 4, lines 34 - 44 (emphasis supplied); and (iv) the tape wrapped around the limb of a mammal and over an ankle joint in multiple overlapping layers. Column 5, lines 7 - 10 (emphasis supplied). In summary, the DeRusha wrapped areas simply cannot be said to describe the "flooring environment" limitation twice repeated by claim 12.

The Office also contends that the term "disposed," as defined by Merriam-Webster's, means "to give a tendency to." Office Action, p.4. But this reasoning also fails under the analysis above. Even if "disposed" means "tends to," nothing in DeRusha can be said to fairly suggest even a "tendency" to adhere to the flooring environment instead of the materials listed like glass, metal, fabric, plaster casts, or human skin. DeRusha, Column 5, lines 1-5.

DeRusha fails to show the identical invention in as complete detail as contained in the claim. For at least this reason, DeRusha does not anticipate claim 12. Reconsideration is requested.

REJECTIONS UNDER 35 U.S.C. § 103(a)

Applicant respectfully asserts that the obviousness rejections are improper. In one instance, the Office fails to make out a prima facie case of obviousness. In

another instance, the references applied are improperly not enabling for the teachings relied upon by the Office.

I. Johnston

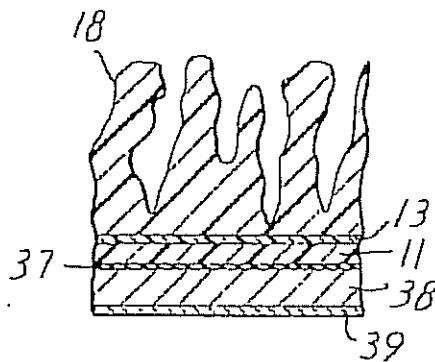
Claims 1-3, 5, 7 and 9-11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Johnston. All words in a claim must be considered in judging the patentability of that claim against the prior art. (MPEP § 2143.03, citing In re Wilson, 424 F.2d 1382, 1385 (CCPA 1970)). Because the Johnston analysis fails to consider all the claim limitations, a prima facie case has not been made.

A. Johnston Fails To Disclose A Polymer Layer Attached To An Adhesive Layer.

Claim 1 calls for, among others:

"a polymer having a Shore A Hardness of between 92 and 100 ... and a layer of adhesive attached to said polymer layer." (emphasis added).

The Office contends Johnston discloses an adhesive article that can be formed into any shape, (Abstract: Column 8, lines 16-20) comprising a polymer layer having a Shore A Hardness of between about 60 and 95 (Figures 4 and 6, reference #18, Column 4, lines 51-55) and a layer of adhesive attached to said polymer layer (Figure 6, reference #38). Office Action p. 5. A careful reading reveals that Johnston teaches a friction-surface sheet with multiple layers, including embossed layer #18 bonded to the thermoplastic polymer layer #13, that, in turn, is bonded to film #11. Film #11 is bonded to a pressure sensitive adhesive layer #38 that may be primed with a rubber primer layer #37. Finally, a release liner #39 protects the assembly. Johnston, Column 2, lines 44 – 58. Figure 6 of Johnston is reproduced below with a legend of reference numbers and descriptions from the specification:



- 18 – embossed layer / copolymer
- 13 – thermoplastic polymer primer
- 11 – film or backing layer
- 37 – prime coating / rubber
- 38 – pressure sensitive adhesive layer
- 39 – release liner

FIG. 6

Again, claim 1 requires the adhesive layer to be attached to "said polymer layer," meaning the layer with the Shore A Hardness limitations. The Office identifies the adhesive layer as Johnston's reference #38, and the polymer layer as Johnston's embossed layer, reference #18. Assuming, arguendo that Johnston's embossed layer #18 renders the claimed Shore A Hardness range obvious, the embossed polymer layer #18 is plainly not in contact with or attached to the adhesive layer #38. Rather, Johnston discloses at least film #11 preventing attachment of polymer #18 to adhesive #38.

Additionally, Applicant submits the Declaration of Joseph T. Mausar Under 37 C.F.R. 1.132 (filed herewith). Mr. Mausar reviewed Johnston and concluded that a person skilled in the art would not read Johnston's disclosure as describing an adhesive layer attached to the polymer layer. Mausar Decl. ¶ 30.

For this reason alone, the rejection of claim 1 as obvious in light of Johnston is inappropriate because Johnston fails to teach each and every element claimed and the rejection fails to include some articulated reasoning with some rational underpinning to explain the deficiencies and support the legal conclusion of obviousness. Further claims 2, 3, 5, 7, 9 and 10 depend directly or indirectly from

claim 1, and should be deemed allowable at least to the extent that Johnston fails to teach the above limitations. In re Fine, 837 F.2d 1071, 1076 (Fed. Cir. 1988).

B. Johnston Fails To Disclose A Pressure Sensitive Adhesive In Direct And Uninterrupted Contact With The Polymer Layer.

Claim 11 calls for, among others "a polymer layer ... and a layer of pressure sensitive adhesive ... being in direct and uninterrupted contact with the polymer layer...." (emphasis added).

The Office contends that Johnston teaches an adhesive tape that can be cut into any shape including a narrow strip or band, (Abstract; Column 8, lines 16-20) comprising a polymer layer (Column 4, lines 51-55, Figure 6, reference #18) and a layer of pressure sensitive adhesive (Figure 6, reference #38), being in direct and uninterrupted contact with the polymer layer. Office Action, p. 5.

As above, the rejection must be withdrawn because Johnston does not teach that polymer layer #18 (purported to have the required Shore A Hardness) is in direct and uninterrupted contact with the adhesive layer #38.

Additionally, Applicant submits the Declaration of Joseph T. Mausar Under 37 C.F.R. 1.132 (filed herewith). Mr. Mausar reviewed Johnston and concluded that a person skilled in the art would not read Johnston's disclosure as describing an adhesive layer with one side in direct and uninterrupted contact with the polymer layer. Mausar Decl. ¶ 33.

A prima facie case of obviousness has not been made for claim 11 in light of Johnston for at least the reason that Johnston fails to teach each and every element claimed and the rejection fails to include some articulated reasoning with some rational underpinning to explain the deficiencies and support the legal conclusion of obviousness.

II. Reeves

Claims 1-6, 9 and 10 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Reeves. In order to render a claimed apparatus or method

obvious, the prior art must enable one skilled in the art to make and use the apparatus or method. Beckman Instruments, Inc. v. LKB Produkter AB, 892 F.2d 1547, 1551 (Fed. Cir. 1989), citing, In re Payne, 606 F.2d 303, 314, (CCPA 1979). Even if a reference discloses an inoperative device, it is prior art for its enabled teachings. Id., (Prior art machine operated, and was thus enabled even if operation was sub-optimal); Therasense, Inc. v. Becton, Dickinson and Company, 593 F.3d 1289, 1298 (Fed. Cir. 2010), (prior art machine exhibiting very low oxygen sensitivity enables comparably sensitive machine). However, such disclosure does not render subject matter unpatentable if it is not sufficiently enabling, in other words, if it does not place the subject matter within "the possession of the public." In re Wilder, 429 F. 2d 447, 451 (CCPA 1970).

Because Reeves fails to place the disclosed Shore A hardness range in possession of the public, the rejection is improper and should be withdrawn.

Reeves Fails To Disclose An Operative Shore Hardness Range Between 92 And 100.

Claim 1 calls for, among others: "a polymer layer having a Shore A Hardness of between 92 and 100."

The Office contends that Reeves meets the above limitation by disclosing a Shore A Hardness of between about 70 and 140 (Column 14, lines 25-29). Office Action, pp. 7-8.

The Shore A Hardness scale is one of several scales to describe the relative hardness of a material. Mausar Decl. ¶ 36. The dimensionless value is determined with an instrument called a durometer under the control of an operator conducting standardized tests. Mausar Decl. ¶ 37-38. In brief, the durometer applies an indenter to a sample material being tested. Mausar Decl. ¶ 39-40. If the indenter completely penetrates the sample, a hardness of 0 is recorded. If no penetration occurs, a hardness reading of 100 results. Mausar Decl. ¶ 41. Therefore, the scale for Shore A Hardness ranges from 0 to 100. Mausar Decl. ¶ 36, 38, 41. A Shore A

Hardness range that exceeds 100, such as that described by Reeves, is meaningless. Mausar Decl. ¶ 43.

Reeves purports to disclose a hardness range of 70-140 Shore A. The described range exceeds the limits of the Shore scale for more than half of the range described. In other words, only the 30 units of hardness of between 70-100 of the range are possible. The 40 units of hardness above 100, that, is from 101-140 Shore A, are impossible. Mausar Decl. ¶ 45. Indeed, one skilled in the art would not be able to determine any valid teaching from Reeves as to what hardness range was intended. Mausar Decl. ¶ 46.

As such, because the teaching of Reeves hardness range of 70 – 140 Shore A does not place the subject matter within "the possession of the public" it is non-enabling and insufficient support for a rejection under 35 U.S.C. § 103. In re Wilder.

For at least the reason that Reeves fails to teach the claimed invention, the rejection is believed overcome. Further, claims 2-6, 9 and 10 depend directly or indirectly from claim 1, and should be deemed allowable at least to the extent that Johnston fails to teach the above limitations. In re Fine, 837 F.2d 1071, 1076 (Fed. Cir. 1988).

III. Hornibrook

Claim 12 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over Hornibrook. All words in a claim must be considered in judging the patentability of that claim against the prior art. (MPEP § 2143.03, citing In re Wilson, 424 F.2d 1382, 1385 (CCPA 1970)). Because the Hornibrook analysis fails to consider all the claim limitations, a prima facie case has not been made.

Hornibrook Fails to Disclose Application to a Flooring Environment

Claim 12 calls for "An adhesive tape for application to a flooring environment" and an "adhesive layer disposed to adhere to the flooring environment...." (emphasis supplied).

Hornibrook includes absolutely no mention, suggestion or support for its decorative products to be used in "a flooring environment." Indeed, the Office makes no showing that the claim element was even considered. The single use of the "flooring environment" term in the rejection is a mention in passing defining the term "disposed," as meaning "to give a tendency to." Office Action, p.11. But even if "disposed" indeed means "tends to," nothing in Hornibrook or its analysis can be said to fairly suggest even a tendency to adhere to the flooring environment.

The rejection under Hornibrook fails to consider all the claim limitations. For at least this reason, the rejection is improper and should be reversed. Reconsideration is requested.

IV. New Claims 13 and 14

New claims 13 and 14 have been added as dependent claims from claim 12 and 1 respectively and add detail to the peel adhesion tests as recited in the specification as originally filed at page 6, first full paragraph. No new matter is believed included.

The new claims are believed patentable over the references of record for at least the following reasons.

DeRusha discloses a foam tape having a peel strength as measured by PSTC-1. Mausar Decl. ¶ 18. DeRusha's PSTC-1 test includes peeling the sample at a peel angle of 180 degrees after a dwell time of one minute. Mausar Decl. ¶ 19.

New claim 13 calls for the peel adhesion to be measured when peeling the tape at a 90 degree angle. A skilled artisan would expect peel adhesion to change upon a change in test peel angle. Mausar Decl. ¶ 23. Moreover, a skilled artisan would not interpret DeRusha's test as teaching the 90 degree angle claimed. Mausar Decl. ¶ 23.

Hornibrook discloses a peel adhesion test including a peel angle of 180 degrees. Mausar Decl. ¶ 49. Moreover, peel adhesion results change as test peel angles change. Mausar Decl. ¶ 51.

New claim 14 calls for a certain peel adhesion when tested at a 90 degree angle and a dwell time of one hour.

CONCLUSION

Applicant, intending to be completely responsive, believes that the amendments and remarks presented above resolve all outstanding issues on the above-referenced application. Accordingly, the application is believed to be in condition for allowance. Early notice thereof is earnestly solicited. While no additional fees are believed due, the Commissioner is hereby authorized to charge any necessary additional fees, or credit any overpayment, to Deposit Account No. 50-4883, referencing Attorney Docket No. 5923.0001.

Respectfully submitted,

Dated: 23 FEB 2011

By: 

W. Scott Harders
Registration No. 42,629

Brennan, Manna & Diamond, LLC
75 East Market Street
Akron, OH 44308

Electronic Patent Application Fee Transmittal				
Application Number:		10674108		
Filing Date:		29-Sep-2003		
Title of Invention:		ADHESIVE TAPE		
First Named Inventor/Applicant Name:		Thomas R. Goecke		
Filer:		Jackie Ann Ruller		
Attorney Docket Number:		5923.0001		
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 3 months with \$0 paid	2253	1	555	555

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				555

Electronic Acknowledgement Receipt

EFS ID:	9503600
Application Number:	10674108
International Application Number:	
Confirmation Number:	2438
Title of Invention:	ADHESIVE TAPE
First Named Inventor/Applicant Name:	Thomas R. Goecke
Customer Number:	86625
Filer:	Jackie Ann Ruller
Filer Authorized By:	
Attorney Docket Number:	5923.0001
Receipt Date:	23-FEB-2011
Filing Date:	29-SEP-2003
Time Stamp:	12:31:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$555
RAM confirmation Number	15376
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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1	Rule 130, 131 or 132 Affidavits	Declaration.pdf	2888286 9c11ed65ab017a175da81a210867e14eb0aP06	no	82
Warnings:					
Information:					
2	Amendment/Req. Reconsideration-After Non-Final Reject	ResponseOA.pdf	451040 d1cebbcc49ba91b03ba5e17a9ba02480ec92f	no	16
Warnings:					
Information:					
3	Fee Worksheet (PTO-875)	fee-info.pdf	29839 fcafb4c8a94114194fe328754c5b67092b2376a	no	2
Warnings:					
Information:					
Total Files Size (in bytes):				3369165	

This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.

New Applications Under 35 U.S.C. 111

If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.

National Stage of an International Application under 35 U.S.C. 371

If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.

New International Application Filed with the USPTO as a Receiving Office

If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.

ATTORNEY DOCKET NO. 5923.0001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF : Goecke
TITLE : Adhesive Tape
SERIAL NO. : 10/674,108
FILING DATE : September 29, 2003
ART UNIT : 1788
CONFIRMATION NO. : 2438
ATTORNEY DOCKET NO. : 5923.0001

DECLARATION OF JOSEPH T. MAUSAR UNDER 37 C.F.R. 1.132

I, Joseph T. Mausar, declare that:

1. I am Director of Marketing & Regulatory Affairs of Chemsultants International. My curriculum vitae is attached at Exhibit A.
2. I attended Kansas City Institute of Art in Kansas City, Missouri and graduated with a Bachelor of Fine Arts in Industrial Design. I also attended Baldwin-Wallace College in Cleveland, Ohio and graduated with a Masters in Business Administration.
3. Prior to my present position at Chemsultants International, I was employed at Avery Dennison from 1974 to 1987 in various positions related to pressure sensitive products used in various applications including labels, tapes and graphic materials. I have over 25 years of direct experience in pressure sensitive adhesive products.

4. I am a joint inventor on U.S. Patent Application No. 12/231,501 entitled "Multilayered, Composite Proton Exchange Membrane and a Process for Manufacturing the Same."
5. I am being compensated for preparing this declaration at my normal consulting rate.
6. I have reviewed the specification and drawings of the application as filed, and the current claims of the captioned application ("the Subject Application"). I have also reviewed the Office Action dated August 23, 2010 ("the Office Action") in the Subject Application. Copies of the Subject Application and the Office Action are attached at tabs B and C respectively.
7. In my opinion, a person having ordinary skill in the art at the time of the invention disclosed in the Subject Application is one with a background in pressure sensitive adhesive technology and products combined with 3-5 years minimum experience in the physical testing, research or quality assurance areas of pressure sensitive adhesives. I qualify as a person of ordinary skill art.
8. Regarding the rejection under 35 U.S.C. §112, first paragraph, I understand the patent examiner has determined that the term "substantially uniform" in claim 1 is not supported by the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor, at the time the application was filed in 2003, has possession of the claimed invention.
9. On page 4 of the filed application, the applicant describes test samples constructed of a semi-rigid, polyvinyl chloride extruded from a 2 ½ inch diameter NRM extrusion machine under specified

conditions. The paragraph continues that a textured first surface of the extruded polymer layer was achieved.

10. On page 5 of the filed application, the applicant describes tests on the textured samples constructed. 10 replicates of each sample were measured. Results indicate thickness of the material with and without the liner, on average as being 68.4 mil and 65.4 mil respectively.
11. Page 5 further describes "caliper or thickness" determinations of the example test sample described as "textured." The thickness determination is said to have been conducted according to the PSTC-33 method.
12. One skilled in the art would understand, in 2003, the PSTC-33 method included the determination of the thickness (caliper) of the pressure sensitive tape under test wherein the sample under test is placed under a presser foot of between 5 and 16 mm in diameter. This test provides a measurement of thickness of the test surface.
13. The chart on page 7 of the filed application indicates that 10 measurements of the textured samples without liners averaged 65.4 mils with a standard deviation of 0.5 mil. The standard deviation of 0.5 mil as a percentage of the indicated thickness is a 0.76% variation. As 0.5 mil is 1 standard deviation, or 1 Sigma, 66% of all areas of the sample were within 0.5 mil in thickness. At a variation of 1.5 mils, a variation of 2.3%, this variation would equate to 3 Sigma or a 99+% of all areas of the sample were within

1.5 mils in thickness. This indicates the substantial uniformity in thickness of the samples.

14. Figure 1 of the filed application shows a cross sectional view of a tape including an apparently substantially uniform polymeric material (1). At the top of page 4 of the filed application, the polymeric material is said to be preferably but not necessarily textured and having a thickness of about 0.020 to 0.065 inches.
15. Based on the disclosures above, I conclude that the Subject Application shows to one skilled in the art that the applicant possessed the claimed "substantially uniform" but possibly textured polymer layer at the time the application was filed.
16. I have also reviewed the applied prior art: U.S. Patent No. 4,484,574 to DeRusha et al. ("DeRusha"); U.S. Patent No. 3,895,153 to Johnston et al. ("Johnston"); U.S. Patent No. 5,508,084 to Reeves et al. ("Reeves"); U.S. Patent No. 4,248,762 to Hornibrook et al. ("Hornibrook");. Copies of the DeRusha, Johnston, Reeves and Hornibrook are attached at tabs D, E, F and G respectively.
17. Regarding the rejection under 35 U.S.C. §102, DeRusha discloses a foam tape that may be used as a bandage or an athletic wrap. DeRusha, Column 1, lines 6 and 7. DeRusha teaches that the adhesive must securely attach to one side of the foam and releasably adhere to the other side of the foam. DeRusha, Column 3, lines 28 – 30. To achieve this dual adhesivity – strongly adhered on one side and releasably adhered on the other – DeRusha describes rolling a sandwich of foam, adhesive and a

release liner and storing the roll for at least 24 hours allowing the adhesive to set. Afterwards, the release liner is removed resulting in the adhesive being permanently affixed to the front side of the foam layer and releasably adhered to the back side of the foam.

DeRusha, Column 4, lines 6 – 9, 19 – 22 and 29 – 31.

18. DeRusha notes that a “relatively ‘hard’ adhesive is required if the tape is to be reversibly self-rolled. The adhesive should have peel strength (as measured by Pressure Sensitive Tape Council adhesion test method 1 (PSTC-1)) of 250 g/cm width to 850 g/cm width at 1 mil adhesive thickness....” DeRusha, Column 3, lines 40 – 45.
19. One skilled in the art would understand the PSTC-1 test method entails adhering the test sample to a backing and peeling within one minute (known as dwell) at a 180 degree angle.
20. Claim 12 of the Subject Application recites, among other things, an adhesive tape having “a peel adhesion greater than 2.0 lb/in width.”
21. The specification at page 6, first full paragraph, describes the peel adhesion test conducted on the applicant’s test samples. The test describes a modified PSTC-101 method. The test method describes peeling the test sample from the substrate at a 90 degree angle after a dwell time of one hour.
22. I believe the peel adhesion claim language refers to the modified test method described in the specification on page 6.
23. I do not believe that a skilled artisan would interpret the PSTC-1 test described by DeRusha to be equivalent to the test described

by the applicant. Among the reasons are the different test methodologies including a peel angle of 180 degrees in DeRusha and a peel angle of 90 degrees in the Subject Application and a dwell of one minute in DeRusha and one hour in the Subject Application. One skilled in the art would recognize that peel angle and dwell time variations will change measured peel adhesions.

24. For this reason, I disagree with the Office's contention that DeRusha's peel adhesion range teaches the claimed range for an "adhesive tape" having a peel adhesion greater than 2.0 lb/in width.
25. Therefore, it is my opinion that DeRusha fails to disclose each and every limitation of claim 12.
26. Regarding the rejections under 35 U.S.C. §103, Johnston discloses a friction-surface sheet comprised of film of polyethylene terephthalate (reference number 11) bonded on one side to thermoplastic layer (reference number 13) and bonded on the other side to an adhesive layer (reference number 38). Johnston, Column 2, lines 4 – 11 and 44 – 54.
27. Johnston further discloses that an upper, embossed layer (reference number 18) may be bonded atop the thermoplastic layer (reference number 11). Johnston, Column 2, lines 48 – 51. Johnston continues that the upper, embossed layer (reference number 18) should have a Shore A hardness between 60 and 95.
28. Based on my review of Johnston, neither Johnston's figures nor specification discloses a polymer layer (reference number 18) with

Shore A hardness between 60 and 95 attached to the layer of adhesive (reference number 38).

29. Claim 1 of the Subject Application recites, among other things, a "polymer layer having a Shore A Hardness of between about 92 and 100 and a layer of adhesive attached to said polymer layer."
30. I do not believe that a person skilled in the art would read Johnston's disclosure as describing an adhesive layer attached to a polymer layer.
31. For at least the reason that Johnston does not show the layer of adhesive attached to the polymer layer, it is my opinion that Johnston fails to disclose each and every limitation of claim 1.
32. Claim 11 of the Subject Application recites, among other things, a "polymer layer" and a layer of adhesive with one side "being in direct and uninterrupted contact with the polymer layer..."
33. I do not believe that a person skilled in the art would read Johnston's disclosure as describing an adhesive layer with one side being in direct and uninterrupted contact with the polymer layer.
34. For at least the reason that Johnston does not show the layer of adhesive in direct and uninterrupted contact with the polymer layer, it is my opinion that Johnston fails to disclose each and every limitation of claim 11.
35. Regarding the rejection under 35 U.S.C. §103 starting at page 7, paragraph 9 of the Office Action, Reeves discloses a mouse pad (1) having a control surface (2). Reeves, Col. 9, lines 3 and 4. Reeves

shows the control surface (2) as including a control layer (19) and describes the control layer as preferably having a "hardness ranging from about 70 durometer to about 140 durometer, measured on the Shore 'A' durometer scale." Reeves, Figures 2 – 9 and Col. 14, lines 25 – 27.

36. One skilled in the art would understand the Shore "A" durometer scale as being one of several scales to objectively assess the hardness of materials. One would also know that the range of the Shore "A" scale is 0 – 100.
37. Durometer is one of several measures of the hardness of a material. Hardness may be defined as a material's resistance to permanent indentation. The term durometer is often used to refer to the measurement, as well as the instrument itself. Durometer is used as a measure of hardness in polymers, elastomers and rubbers.
38. There are several scales of durometer, used for materials with different properties. The two most common scales, using slightly different measurement systems, are the ASTM D2240 type A (Shore A) and type D (Shore D) scales. The A scale is generally for softer plastics, while the D scale is for harder ones. Each scale results in a value between 0 and 100, with higher values indicating a relatively harder material.
39. Durometer, like many other hardness tests, measures the depth of an indentation in the material created by a given force on a standardized indenter. This depth is dependent on the hardness of

the material, its viscoelastic properties, the shape of the indenter, and the duration of the test.

40. ASTM D2240 durometers allows for a measurement of the initial hardness, or the indentation hardness after a given period of time. The basic test requires applying the force in a consistent manner, without shock, and measuring the hardness (depth of the indentation). If a timed hardness is desired, force is applied for the required time and then read.
41. The final value of the hardness depends on the depth of the indenter after it has been applied for 15 seconds on the material. If the indenter penetrates completely through, or 2.54 mm (0.100 inch) or more into a thicker material, the durometer is 0. If it does not penetrate at all, then the durometer is 100.
42. Durometer is a dimensionless quantity, and there is no simple relationship between a material's durometer in one scale, and its durometer in any other scale, or by any other hardness test.
43. On the Shore A Hardness scale a durometer value less than 0 or a value that exceeds 100 is meaningless.
44. Reeves discloses its hardness teaching only once. Specifically, Reeves makes a single mention of a Shore "A" hardness range of about 70 to about 140 at column 14, line 26.
45. The described range exceeds the limits of the scale for more than half of the range described. In other words, only the 30 units of hardness of between 70-100 of the range are possible. The 40 units of hardness above 100, that is from 101-140 Shore A, are simply impossible.

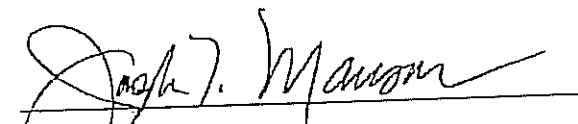
46. I cannot discern any fair teaching of the actual hardness of the control layer from the Reeves specification, and do not believe that a person skilled in the art would be able to.
47. Regarding the rejection under 35 U.S.C. §103, starting at page 9, paragraph 10 of the Office Action, Hornibrook is said to disclose, among others, "a peel adhesion greater than 2.0 lb/in width (Column 5, lines 1-3)."
48. Hornibrook describes the test methodology used to arrive at the recited peel adhesion starting at column 4, line 63. Specifically, Hornibrook recites the test as using the standard Pressure Sensitive Tape Council (PSTC) 4.5 pound (2.04 kg.) roller. The disclosure continues that the peel adhesion was measured at "180° C." after a "24 hour wetout or 'dwell' period." Column 4, line 68 bridging to column 5, line 1.
49. By convention "180° C" would indicate that the test was conducted at the called for temperature. To the contrary and after study, one skilled in the art would recognize the Celsius identifier "C" to be a typographical error. Instead of temperature, one skilled in the art would recognize that the test was conducted at a 180 degree angle.
50. That temperature was an error is supported by the balance of the Hornibrook specification. For example, where temperatures are clearly recited, they are listed in Fahrenheit with Celsius conversions noted parenthetically. See e.g. column 4, lines 30 and 51; column 6, line 24; column 7, line 1. Additionally, the specification later calls for a test to be conducted at a 180 degree angle. See, column 6, line 31.

51. Peel adhesion changes as peel angle changes. For example, at least one technical handbook notes that test results change depending on peel test angle, when all else is held constant. See, Handbook of Pressure Sensitive Adhesive Technology, 3d Edition, Satas & Associates, 1999, Chapter 5 – Peel Adhesion, page 79.
52. Claim 12 of the Subject Application recites, among other things, an adhesive tape having “a peel adhesion greater than 2.0 lb/in width.”
53. The specification at page 6, first full paragraph, describes the peel adhesion test conducted on the applicant’s test samples. The test describes a modified PSTC-101 method. The modifications include at least peeling the test sample from the substrate at a 90 degree angle after a dwell time of one hour. Page 6, lines 6, 7.
54. I believe the claim peel adhesion language refers to the test as described in the specification on page 6.
55. I do not believe that a skilled artisan would interpret the results of the peel adhesion test described by Hornibrook to be equivalent to the results of the peel adhesion test described by the applicant. Among the reasons are the different test methodologies including applicant’s use of a 90 degree peel angle as opposed to Hornibrook’s 180 degree peel angle.
56. One skilled in the art would expect peel adhesion tested at a 180 degree angle to be different than a peel adhesion tested at a 90 degree angle.

57. For this reason, I disagree with the Office's contention that Hornibrook's peel adhesion teaches the claimed peel adhesion greater than 2.0 lb/in width.
58. Therefore, it is my opinion that Hornibrook fails to disclose each and every limitation of claim 12.

All statements made of my own knowledge are true, and all statements made on information and belief are believed to be true. I have been warned that willful, false statements and the like are punishable by fine or imprisonment, or both (18 U.S.C. 1001) and may jeopardize the validity of the application or of any patent issuing thereon.

Date: February 22 2011



Joseph T. Mausar

ATTORNEY DOCKET NO. 5923.0001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF	:	Goecke
TITLE	:	Adhesive Tape
SERIAL NO.	:	10/674,108
FILING DATE	:	September 29, 2003
ART UNIT	:	1788
CONFIRMATION NO.	:	2438
ATTORNEY DOCKET NO.	:	5923.0001

Exhibit A

Joseph Mausar CV

Joseph T. Mausar

Position: Director of Marketing & Regulatory Affairs

**Areas of
Expertise:**

Products: PSA labels, tapes and graphics
Printing papers including coated, uncoated, impregnated and synthetics for offset sheet and flexographic roll converting
Calendared and cast PVC films
Reflective films and optics in specialty applications
Photographic film and processing
Flexographic, offset and digital printing technology
PSA coating methods including gravure, multiple roll, knife over roll, slot die and wire rod
Fuel Cell technology including polymer membranes and PEMFC MEAs

Markets: Adhesives and Coatings
Printing and Packaging
Labels & Tapes & Converting
Medical and Pharmaceutical
Fuel Cells

Business: Federal, State and Special organizational grant proposal development
Development and implementation of strategic business, marketing and sales operation plans and budgets
New product opportunity identification, product parameter definition, product development and field introductions
New sales and market development planning and implementation
Advertising, promotion and communications planning / implementation
Quality system planning and implementation
Expert witness

**Industry
Experience:** Avery Dennison 1974 - 1987
Flex-O-Lite/Services & Materials, 1987 - 1990
Ritrama, 1990 - 1993
Freehold Enterprises, 1994 - 1999
Chemsultants International, 1999 - present

**Academic
Background:** M.B.A. in Marketing Management, Baldwin-Wallace College, Cleveland, OH
B. F. A. in Industrial Design, K.C.I.A., Kansas City, MO

**Training and
Certifications:** ISO 17025, ISO 9001, and ISO 13485 Standards
cGMP standards
ISO 17025, A2LA Auditors program
ASTM E4, Calibration and Verification of Force Measurement Equipment

Publications: On the Surface: Surface energy and surface tension are key measurements for the wet-out of adhesives, inks and coatings, Adhesive and Sealant Industry magazine, October, 2010, pp. 33-36.
Manufacturing pressure sensitive adhesive products, Adhesive and Sealant Industry magazine, April, 2005, pp. 35-38.
Coating Conundrum: A pilot coating company may be the answer for the roll coating of adhesives, Adhesive and Sealant Industry magazine, September, 2004, pp. 22-26.
Testing and Evaluating the performance of pressure sensitive adhesives for TDDS patches, Transdermal magazine, accepted for publication in the May 2011 issue.

Patents: Multilayered, Composite Proton Exchange Membrane and a Process for Manufacturing the Same, U.S. Patent Application No. 12/231,501

ATTORNEY DOCKET NO. 5923.0001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF	:	Goecke
TITLE	:	Adhesive Tape
SERIAL NO.	:	10/674,108
FILING DATE	:	September 29, 2003
ART UNIT	:	1788
CONFIRMATION NO.	:	2438
ATTORNEY DOCKET NO.	:	5923.0001

Exhibit B

Subject Application

Pressure Sensitive Adhesive Tape for Floor Marking

ABSTRACT:

The pressure sensitive adhesive tape of this invention comprises a first layer of polymeric material, particularly a polyvinyl chloride, having a Shore A Hardness of between 92 and 100 and a second layer of adhesive material attached to a surface of the layer of polymeric material.

BACKGROUND:

This invention relates to an adhesive tape having superior ductility, strength, tear resistance and abrasion resistance, particularly a pressure sensitive adhesive. Polymeric pressure sensitive adhesive tapes are economical and adaptable to many different applications. One primary example is as floor marking in industrial and factory environments. However, there are several disadvantages to using such tape in industrial settings. One disadvantage is that the tape lacks sufficient strength and hardness to prevent wearing, tearing, cracking and breakage from heavy and repeated traffic, such as from forklift trucks. Similarly, as a result of poor adhesive quality, repeated traffic has a tendency to detach many commercially available tapes from the floor. Another disadvantage is that the aesthetic qualities and physical properties of the tape are diminished from scuffing, scratching, and the like. Such disadvantages plague existing polymeric pressure sensitive adhesive tapes. Because of these disadvantages that have been associated with polymeric pressure sensitive adhesive tape, wide industry acceptance has been historically difficult to achieve.

Accordingly, many opt to rely on the time consuming and exacting practice of painting.

In view of the above discussion, it is an advantage of the present invention to provide a polymeric adhesive tape that has superior ductility, strength, tear resistance and abrasion resistance. Other advantages of the present invention will be apparent from the following detailed description.

SUMMARY OF INVENTION

According to one embodiment, an adhesive tape is provided. The tape has a first layer of polymeric material having a Shore A Hardness of between 92 and 100 and a thickness of between .020" and .065", and a second layer of adhesive. Preferably, the adhesive is of a pressure sensitive type.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a cross-sectional view illustrating the embodiment of a polymeric pressure sensitive adhesive tape.

DETAILED DESCRIPTION OF THE INVENTION

The adhesive tape of this invention usually comprises a layer of polymeric material and at least one layer of adhesive material. The pressure-sensitive adhesive tape of this invention is not limited to having only the above layers of polymeric material and layer of pressure-sensitive adhesive material. It may optionally have an additional layer, such as a laminating substrate on an outermost side of the above adhesive layer. The laminating substrate is usually

peeled off and thrown away when pressure-sensitive adhesive tape is actually used. Therefore, inexpensive materials are preferred, however, there are no particular limitations on the materials used for the laminating substrate.

Figure 1 is an example of the pressure-sensitive adhesive tape of this invention wherein a layer of polymeric material (1) is attached to the top side of a layer of pressure-sensitive adhesive material (2) and a laminating substrate (3) is attached to the bottom side of the pressure-sensitive adhesive material. Upon removal of the laminating substrate (3), the tape can be applied to a floor (4) with the application of pressure.

The pressure-sensitive adhesive tape of this invention can be produced in a variety of lengths, widths, and thickness. A variety of colors can also be used for the outer surface of the layer of polymeric material (1). For example, safety yellow can be used for aisle markings, or red can be used for quarantine and reject markings in a production facility. Coloring can be achieved by introducing a colorant in any form, including pigments and dyes into the polymeric material.

The adhesive employed in layer material (3) may be any of those heretofore employed in the art for preparing adhesive structures. By way of illustration, suitable adhesives of this general description include those disclosed in U.S. Pat. No. 5,061,559, herein incorporated by reference.

The layer of polymeric material (1) may be a durable polymer such as polyvinyl chloride, polycarbonate, or a terpolymer comprised of acrylonitrile, butadiene and styrene or the like. A clear or tinted polyvinyl chloride is a preferred material. The polymer selected must have Shore A Hardness between, for example, 92-100, and preferably between 93-97. The outer surface of the

layer of polymeric material (1) is preferably textured. The layer of polymeric material (1) may have a thickness of about, for example, .020" to .065".

Advantageously, this embodiment of the invention provides improved tear resistance, strength, and abrasion resistance by employing the sum or all of the combination of polymer selected, Shore A Hardness, textured surface, and layer thickness.

EXAMPLES

One embodiment of the invention will be described below in greater detail through the following examples.

Test samples were performed on a 4" wide sample of the pressure sensitive adhesive tape of this invention. The example tape was constructed of a semi-rigid 95A polyvinyl chloride from Artemis Industries, 2550 Gilcrest Rd, Akron Oh 44305 which was extruded from a 2½" diameter NRM extrusion machine at 360-380 °F at an extrusion rate of 400 ft per hour to yield a .065 thick, 4" wide layer. A textured first surface of the extruded polymer layer was achieved by following the above process parameters. During extrusion a rubberized double sided carpet tape (Product # 591B) from International Tape Co., P.O. Box 240, 6 Industrial Drive, Windham, NH 03087 was applied to a second side of the extruded polymer layer. A tape from Windmill Tapes of Great Britain (www.windmilltapes.com) was used for comparison purposes. Test samples were conditioned at 73 ± 3°F and 50 ± 5% relative humidity for at least 24 hours prior to testing.

Tensile strength at yield point was determined according to ASTM D 882 testing method. A 0.5" x 8" sample was prepared and placed in the jaws of the

instrument at a separation of 4.0". The tester was started at a separation rate of 2.0 in/min. At the instance the tape yielded the force was recorded. Five replicates of each sample were conducted and the results were normalized to pounds per inch width. Results indicate higher yield point and higher absolute forces involved at yield point for the pressure sensitive adhesive tape of this invention. Particularly, the yield point in both machine and traverse direction were respectively, on average, 3,176 lb/in² and 3,136 lb/in².

Tear resistance was determined according to the ASTM D 1004 test method. The samples were die cut according to the method. The liner from the sample was removed and the sample was placed in the jaws of the tester at a separation of one inch. The tester was started at a rate of 2.0 in/min. The maximum force encountered during testing was recorded. Five replicates of each sample in both the machine and traverse direction were tested. Results indicate substantially improved tear strength in both the machine and traverse directions for the pressure sensitive adhesive tape of this invention. Particularly, the tear strength in both machine and traverse direction was respectively, on average, 22.3 lb and 22.1 lb.

Caliper or thickness was determined according to the PSTC-33 method. Caliper of the material was determined both with and without the liner. Ten replicates of each sample were measured. Results indicate substantially increased thickness of the pressure sensitive adhesive tape of this invention, partly because of the inherent characteristics of the semi-rigid surface. Particularly, the thickness of the material, with and without the liner, was respectively, on average, 68.4 mil and 65.4 mil.

Peel adhesion was tested according to a modified PSTC-101D method. The modification included dwell time. Peel adhesion is a measure of the strength of the adhesive bond between the tape and the test surface. Exactly one (1.0) inch wide samples were applied to a standard stainless steel test panel at a rate of 24 in/min with a 4.5 pound rubber covered roller according to the method. The tape was then peeled from the substrate at a 90° angle after a dwell time of one hour. The force required for removal was measured. Five replicates of each sample were tested. Results indicate substantially increased peel adhesion for the pressure sensitive adhesive tape of this invention when applied to stainless steel. Particularly, the peel adhesion of this material was, on average, 5.2 lb/in width.

Abrasion resistance was determined according to a modified ASTM D 5264 test method. The material was cut to a 2.5" x 6" size. A new 2" x 4" piece of standard A-5 receptor material (moderate abrasive) from Gavarti Associates Ltd. was affixed with double-sided tape to the four pound instrument weight (0.5 lb/in² load). This in turn was placed over the test sample. The instrument was set for 100 strokes and operation was initiated. The instrument strikes an arc with the abrasive over the test material. Each stroke consists of one motion back and forth over the sample. When the cycles were completed the weighted abrasive was lifted and the test sample removed. At the conclusion of the test the overall quality of each sample was evaluated relatively for scratch resistance. Results indicate that the abrasion resistance of the pressure sensitive adhesive tape of this invention is improved over the comparative tape.

Results obtained were as follows:

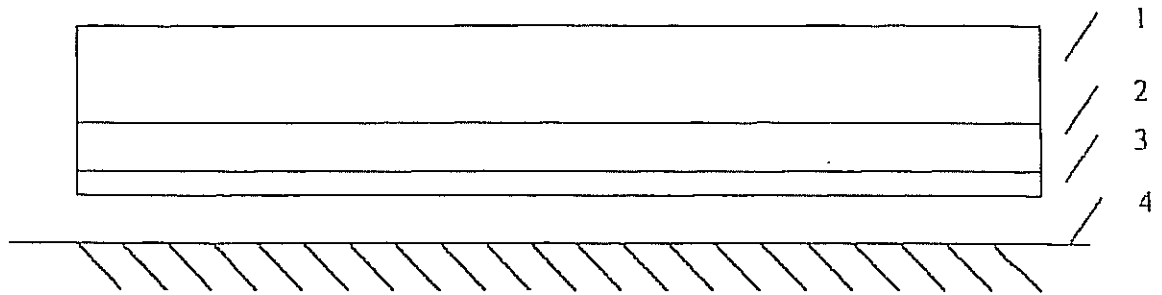
	Average	σ (standard deviation)	N (test numbers)
Tensile at Yield at 2.0 in/min, lb/in²			
Inventive Sample Machine Direction	3,176	152	5
Inventive Sample Traverse Direction	3,136	56	5
Comparative Sample Machine Direction	2,400	160	5
Comparative Sample Transverse Direction	1,720	120	5
Tear at 2.0 in/min, lb.			
Inventive Sample Machine Direction	22.3	1.6	5
Inventive Sample Traverse Direction	22.1	0.4	5
Comparative Sample Machine Direction	2.2	0.1	5
Comparative Sample Transverse Direction	1.6	0.1	5
Caliper, mil.			
Inventive Sample With Liner	68.4	0.5	10
Inventive Sample Without Liner	65.4	0.5	10
Comparative Sample	5.5	0.04	10
Adhesion to Stainless lb/in width			
Inventive Sample	5.2	0.5	5
Comparative Sample	1.7	0.03	5
Abrasion Resistance			
Inventive Sample	Excellent – no sign of damage		
Comparative Sample	Fair – moderate damage		

Since certain changes may be made without departing from the scope of the invention herein involved, it is intended that all matter described in the foregoing description, including the examples, shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. An adhesive tape comprising:
 - (1) a polymer layer having a Shore A Hardness of between about 92 and 100; and
 - (2) a layer of adhesive attached to said first polymer layer.
2. The adhesive tape of claim 1, further comprising a substrate attached to outermost side of said second layer.
3. The adhesive tape claim of claim 1, wherein said polymer layer includes a textured surface.
4. The adhesive tape of claim 1, wherein said polymer layer is comprised of a polyvinyl chloride.
5. The adhesive tape of claim 1, wherein said polymer layer includes coloring pigment.
6. The adhesive tape claim of claim 4, wherein said polyvinyl chloride comprises a clear polymer.
7. The adhesive tape claim of claim 1, wherein said pressure sensitive adhesive comprises a rubberized double-sided tape.
8. The adhesive tape claim of claim 1, wherein said first layer has a thickness of between about .020" to .065
9. The adhesive tape claim of claim 1, wherein said first layer has a Shore A Hardness of between about 93 and 97.
10. The adhesive tape of claim 1, wherein said adhesive is pressure sensitive.

FIGURE 1



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ATTORNEY DOCKET NO. 5923.0001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF : Goecke
TITLE : Adhesive Tape
SERIAL NO. : 10/674,108
FILING DATE : September 29, 2003
ART UNIT : 1788
CONFIRMATION NO. : 2438
ATTORNEY DOCKET NO. : 5923.0001

Exhibit C

Office Action dated August 23 2010



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	5923.0001	2435

86625 7399 08/23/2010
Brennan, Manna & Diamond, LLC
The Carnegie Building
75 East Market Street
Akron, OH 44308

EXAMINER

NORDMEYER, PATRICIA L

ART UNIT	PAPER NUMBER
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1753

NOTIFICATION DATE	DELIVERY MODE
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08/23/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@bmdllc.com
wsharders@bmdllc.com
aniller@bmdllc.com

Office Action Summary

Application No.	Applicant(s)	
10/674,108	GOECKE, THOMAS R.	
Examiner	Art Unit	
Patricia L. Nordmeyer	1783	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 15 June 2010.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-918)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other _____

Application/Control Number: 10/674,108

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DETAILED ACTION

Reopening of Prosecution

In view of the remand filed on May 6, 2010, PROSECUTION IS HEREBY REOPENED. Upon further reconsideration of the applied prior art and arguments of record, all rejections of record as set forth in the Non-final rejection dated October 19, 2006 are hereby withdrawn. As new prior art has been found and claims furthered analyzed, new rejections have been applied below.

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1 – 7, 9 and 10 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claim 1 contains the limitation of “substantially uniform,” which is not supported by the specification. The specification is silent with regard to the thickness being uniform. However, the specification does state that the polymer layer contains a textured surface. It is unclear how the polymer layer contains both a substantially uniform thickness and a textured surface.

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Claims 2 – 7, 9 and 10 are also rejected under 35 U.S.C. 112 1st paragraph due to their dependency on the above rejected claim.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1 – 7, 9 and 10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The phrase "substantially uniform" in claim 1 is unclear, which renders the claim vague and indefinite. Claim 1 states that the thickness of the polymer layer is substantially uniform; while claim 3 states that the polymer layer has a textured surface. How can the polymer layer have a uniform thickness while having a textured surface?

Claims 2 – 7, 9 and 10 are also rejected under 35 U.S.C. 112 2nd paragraph due to their dependency on the above rejected claim.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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6. Claim 12 is rejected under 35 U.S.C. 102(b) as being anticipated by DeRusha et al. (USPN 4,484,574).

DeRusha et al. discloses an adhesive tape (Abstract) comprising: a polymer layer having a thickness between 0.031" and 0.236" (Column 2, lines 14 – 23), the polymer layer defining a first side (Figure 1, #16); and a double sided adhesive layer where one side of the double sided adhesive layer¹ is in substantially continuous contact with the first side of the polymer layer (Figure 1, #12) and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment (Column 3, lines 28 – 52; Figure 1, #12, wherein the adhesive can attach to any substrate surface, Column 5, lines 1 – 5); where the adhesive tape has a peel adhesion of 250 g/cm to 850 g/cm width, which meets the limitation of a peel adhesion greater than 2.0 lb/in width (2.0 lb/in width converts to 357 g/cm width) (Column 3, lines 41 – 52) as in claim 12.

As to the limitation of "adhesive layer is disposed to adhere to the flooring environment", the term disposed, as defined by Merriam-Webster's, means "to give a tendency to". Since the adhesive tape of DeRusha et al. meets the claim limitations, it would be capable of, or disposed to, adhere to a flooring environment.

¹ The Examiner notes that any layer of adhesive has two sides, each side having adhesive properties. Therefore, the reference's disclosure of a layer of adhesive anticipates the claim limitation of a double sided adhesive layer.

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Claim Rejections - 35 USC § 103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained through the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1 – 3, 5, 7 and 9 – 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston et al. (USPN 3,895,153).

Independent claims 1 and 11 will be addressed first.

As to claim 1, Johnston et al. discloses an adhesive article that can be formed into any shape, (Abstract; Column 8, lines 16 - 20) comprising a polymer layer having a Shore A Hardness of between about 60 and 95 (Figure 4, #18; Column 4, lines 51 – 55) and a substantially uniform thickness of 10 to 60 mils or 0.010" to 0.060" (Figure 4, #18; Column 5, lines 48 – 52); and a layer of adhesive attached to said polymer layer (Figure 6, #38).

As to claim 11, Johnston et al. also disclose an adhesive tape that can be cut into any shape including a narrow strip or band, (Abstract; Column 8, lines 16 - 20) comprising: a polymer layer having a Shore A Hardness of between about 60 and 95 (Column 4, lines 51 – 55); and a layer of pressure sensitive adhesive comprising a first side and an opposed second side (Figure 6, #38), the first side being in direct and uninterrupted contact with the polymer layer (Figure 6, #38) where the adhesive tape comprises an average thickness between 13.5 and 78 mils, since the backing sheet has a thickness of 1 to 5 mils (Column 4, lines 29 – 31) in combination with the primer layer having a thickness of 0.5 to 3 mils (Column 4, lines 45 – 47).

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the copolymer layer having a thickness of 10 to 60 mils (Column 5, lines 48 – 52) and the adhesive layer having a thickness of 2 to 10 mils (Column 6, lines 11 – 13).

Johnston et al. differs from claims 1 and 11 in two ways. First, Johnston et al. fails to disclose an anticipatory example, or ranges that are sufficiently specific to anticipate the ranges of Shore A Hardness (claims 1 and 11), polymer layer thickness (claim 1) or overall tape thickness (claim 11). However, Johnson et al. teaches a range of Shore A Hardness of between about 60 and 95 (Column 4, lines 51-55) which overlaps the claim 1 and 11 range of between about 92 and 100. Johnston et al. teaches a polymer layer thickness of 0.010 to 0.060" which overlaps the claim 1 range of between about 0.020 and 0.065". Lastly, Johnston et al. teaches an overall thickness of 13.5 to 78 mils which overlaps the claim 11 range of between about 65 and 69 mils. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art to have selected from the overlapping portion of the ranges of Shore A Hardness and thickness taught by Johnston et al. because overlapping ranges have been held to establish *prima facie* obviousness.

Second, Johnson et al. fail to specifically refer to its article as being an "adhesive tape." Johnston et al. teaches that the article can be formed into any shape, (Abstract: Column 8, lines 16 - 20). The term "tape," as defined by Merriam-Webster's, means "a narrow flexible strip or band." And, It is well settled that a particular shape of a prior invention carries no patentable weight unless the applicant can demonstrate that the new shape provides significant unforeseen improvements to the invention. In the instant case, the application does not indicate any new,

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significant attributes of the invention due to its shape which would have been unforeseen to one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to change the shape to change the shape of the adhesive article to be in the form of a narrow strip or band. One skilled in the art would have been motivated to do so in order to change the appearance of the adhesive article. MPEP 2144.04 IV.

With regard to claim 2, the article contains a substrate attached to an outermost side of said layer of adhesive (Figure 6, # 39).

For claim 3, the polymer layer includes a textured surface (Figure 4, #18).

Regarding claim 5, the polymer layer includes coloring pigment (Column 5, lines 38 – 48).

As in claim 7, the adhesive comprises a rubberized double-sided tape (Column 3, lines 43 – 49, since the adhesive has adhesive qualities on the opposite sides of the layer, it reads upon a double side adhesive product).

With regard to claim 9, polymer layer has a Shore A Hardness of between about 60 and 95, thereby meeting the limitation of a Shore A Hardness of 93 and 97 (Column 4, lines 51 – 55).

For claim 10, the adhesive is pressure sensitive (Column 5, lines 67 – 69).

9. Claims 1 – 6, 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reeves et al. (USPN 5,508,084).

Reeves et al. discloses a repositionable article that can be cut into any shape, (Column 7, lines 34 – 36) comprising a polymer layer (Figure 2d, #19; Column 10, lines 21 – 29) having a

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Shore A Hardness of between about 70 and 140 (Column 14, lines 25 – 29) and a substantially uniform thickness of between about 0.020" to 0.065" (Column 10, lines 30 – 35) and a layer of adhesive attached to said polymer layer (Figure 2d, #13; Column 12, lines 30 – 44).

Reeves et al. differs from claim 1 in two ways. First, Reeves et al. fails to disclose an anticipatory example, or ranges that are sufficiently specific to anticipate the claim 1 range of Shore A Hardness. However, Johnson et al. teaches a range of Shore A Hardness of between about 70 and 140 (Column 14, lines 25 – 29) which overlaps the claim 1 range. Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art to have selected from the overlapping portion of the ranges of Shore A Hardness taught by Reeves et al. because overlapping ranges have been held to establish *prima facie* obviousness.

Second, Reeves et al. fails to specifically refer to its article as being an "adhesive tape." Reeves et al. teaches that the article can be formed into any shape. (Column 7, lines 34 – 36). The term "tape," as defined by Merriam-Webster's, means "a narrow flexible strip or band." It is well settled that a particular shape of a prior invention carries no patentable weight unless the applicant can demonstrate that the new shape provides significant unforeseen improvements to the invention. In the instant case, the application does not indicate any new, significant attributes of the invention due to its shape which would have been unforeseen to one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to change the shape to change the shape of the adhesive article to be in the form of a

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narrow strip or band. One skilled in the art would have been motivated to do so in order to change the appearance of the adhesive article. MPEP 2144.04 IV.

With regard to claim 2, the article contains a substrate attached to an outermost side of said layer of adhesive (Column 13, lines 10 – 15).

For claim 3, the polymer layer includes a textured surface (Figure 2d; Column 12, lines 16 - 23).

With regard to claim 4, the polymer layer is comprised of a polyvinyl chloride (Column 13, lines 28 – 36).

Regarding claim 5, the polymer layer includes coloring pigment (Column 12, lines 25 – 31).

As in claim 6, the polyvinyl chloride comprises a clear polymer (Column 12, lines 25 – 31).

With regard to claim 9, polymer layer has a Shore A Hardness of between about 70 and 140, which overlaps the limitation of a Shore A Hardness of 93 and 97 (Column 14, lines 25 – 29).

For claim 10, the adhesive is pressure sensitive (Column 8, lines 9 – 13). However, Reeves et al. fail to disclose that the adhesive article is specifically an adhesive tape.

10. Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hornibrook et al. (USPN 4,248,762).

Hornibrook et al. disclose a pressure sensitive product (Column 1, lines 10 – 13) comprising: a polymer layer having a thickness between 0.002" and 0.020", thereby overlapping

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the thickness limitation of 0.020" and 0.065" (Column 2, lines 1 – 15), the polymer layer defining a first side (Figure 1, #1); and a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer (Column 2, lines 16 – 39; Figure 2, #2) and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment (Column 2, lines 16 – 39; Figure 2, #2); where the adhesive tape has a peel adhesion of 7.5 pounds per linear inch, which meets the limitations of a peel adhesion greater than 2.0 lb/in width (Column 5, lines 1 – 3) as in claim 12.

Hornibrook et al. differs from claim 12 in two ways. First, Hornibrook et al. fails to disclose an anticipatory example, or ranges that are sufficiently specific to anticipate the claim 12 range of thickness of 0.020 to 0.065". However, Hornibrook et al. teaches a range of thickness of 0.002" and 0.020" (Column 2, lines 1 – 15), which overlaps the claim 12 range of between 0.020 and 0.065". Overlapping ranges have been held to establish *prima facie* obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art to have selected from the overlapping portion of the ranges of Shore A Hardness taught by Reeves et al. because overlapping ranges have been held to establish *prima facie* obviousness.

Second, Hornibrook et al. fail to disclose that the adhesive article is specifically an adhesive tape.

The term tape, as defined by Merriam-Webster's, means "a narrow flexible strip or band". It is well settled that a particular shape of a prior invention carries no patentable weight unless the applicant can demonstrate that the new shape provides significant unforeseen

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improvements to the invention. In the instant case, the application does not indicate any new, significant attributes of the invention due to its shape which would have been unforeseen to one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to change the shape of the adhesive article to be in the form of a narrow strip or band. One skilled in the art would have been motivated to do so in order to change the appearance of the adhesive article. MPEP 2144.04 IV.

As to the limitation of "adhesive layer is disposed to adhere to the flooring environment", the term disposed, as defined by Merriam-Webster's, means "to give a tendency to". Since the adhesive product of Hornibrook et al. meets the claim limitations, it would be capable of, or disposed to, adhere to a flooring environment.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Patricia L. Nordmeyer whose telephone number is (571)272-1496. The examiner can normally be reached on Mon.-Fri. from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David R. Sample can be reached on (571) 272-1376. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia L. Nordmeyer
Primary Examiner
Art Unit 1783

/Patricia L. Nordmeyer/
Primary Examiner, Art Unit 1783

/David R. Sample/
Supervisory Patent Examiner, Art Unit 1783

/Sharon A. Gibson/
Director, Technology Center 1700

Notice of References Cited

Application/Control No.

10/674,108

Applicant(s)/Patent Under

Reexamination

GOECKE, THOMAS R.

Examiner

Patricia L. Nordmeyer

Art Unit

1703

Page 1 of 1

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-3,895,153	07-1975	Johnston et al.	428/141
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*	C	US-4,484,574	11-1984	DeRusha et al.	602/75
*	D	US-5,508,084	04-1996	Reeves et al.	428/172
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			

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*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
	U	Merriam-Webster's Collegiate Dictionary, 1996, Merriam-Webster, Incorporated, Tenth Edition, pages 335 and 1205.
	V	
	W	
	X	

* copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a))
 Dates in MM-YYYY format are publication dates. Classifications may be US or foreign

ATTORNEY DOCKET NO. 5923.0001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF	:	Goecke
TITLE	:	Adhesive Tape
SERIAL NO.	:	10/674,108
FILING DATE	:	September 29, 2003
ART UNIT	:	1788
CONFIRMATION NO.	:	2438
ATTORNEY DOCKET NO.	:	5923.0001

Exhibit D

DeRusha U.S. Patent 4,484,574

United States Patent [19]

[11] Patent Number: 4,484,574

DeRusha et al.

[45] Date of Patent: Nov. 27, 1984

- [54] SELF-ROLLED FOAM TAPE WITHOUT RELEASE LAYER AND METHOD OF MAKING SAME
- [75] Inventors: Mark A. DeRusha, El Toro; Thomas E. Schultz, Laguna Niguel; Stephen W. Luchio, Riverside, all of Calif.
- [73] Assignee: Keene Corporation, New York, N.Y.
- [21] Appl. No.: 573,854
- [22] Filed: Jan. 25, 1984
- [51] Int. Cl.³ A61L 15/00; B32B 1/08; B32B 7/06; B32B 7/12
- [52] U.S. Cl. 128/156; 128/169; 128/170; 156/230; 156/238; 156/272.6; 156/324; 428/40; 428/214; 428/215; 428/314.4; 428/317.3; 428/343; 428/355; 428/906
- [58] Field of Search 428/40, 41, 42, 314.4, 428/314.8, 317.3, 317.7, 352, 355, 906, 213, 214, 215, 343; 128/156, 169, 170; 156/230, 238, 272.6, 324

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- 2,740,402 4/1956 Scholl 128/156
- 3,066,043 11/1962 Hechtman et al. 428/343

- 3,649,436 3/1972 Buese 428/317.3
- 4,021,001 5/1977 Sprout 428/317.7
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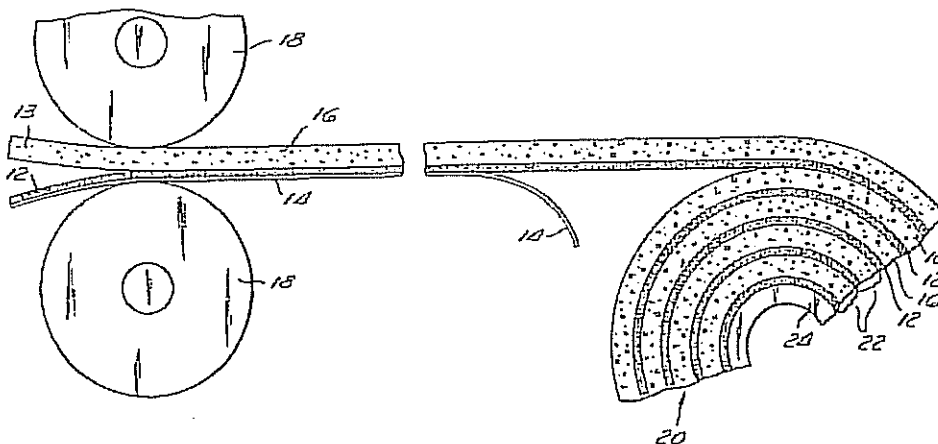
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Primary Examiner—William J. Van Buren
 Attorney, Agent, or Firm—Knobbe, Martens, Olson & Bear

[57] ABSTRACT

A pressure-sensitive tape having a closed-cell polymer foam backing strip and a pressure-sensitive adhesive is disclosed. The tape is formed into a roll so that the adhesive of one layer is in direct physical contact with the foam of the next layer, without the use of release paper or release coatings. The tape may be unwound without significantly disrupting either the adhesive layer or the foam layer. The foam is preferably a closed-cell cross-linked polyethylene copolymer and the adhesive is preferably a hypoallergenic acrylic-based adhesive.

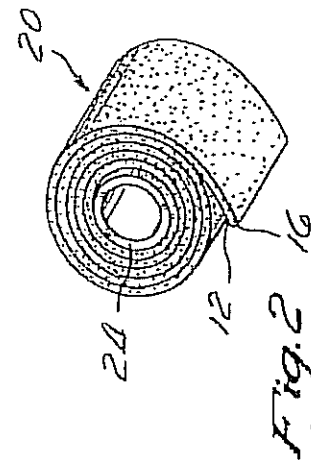
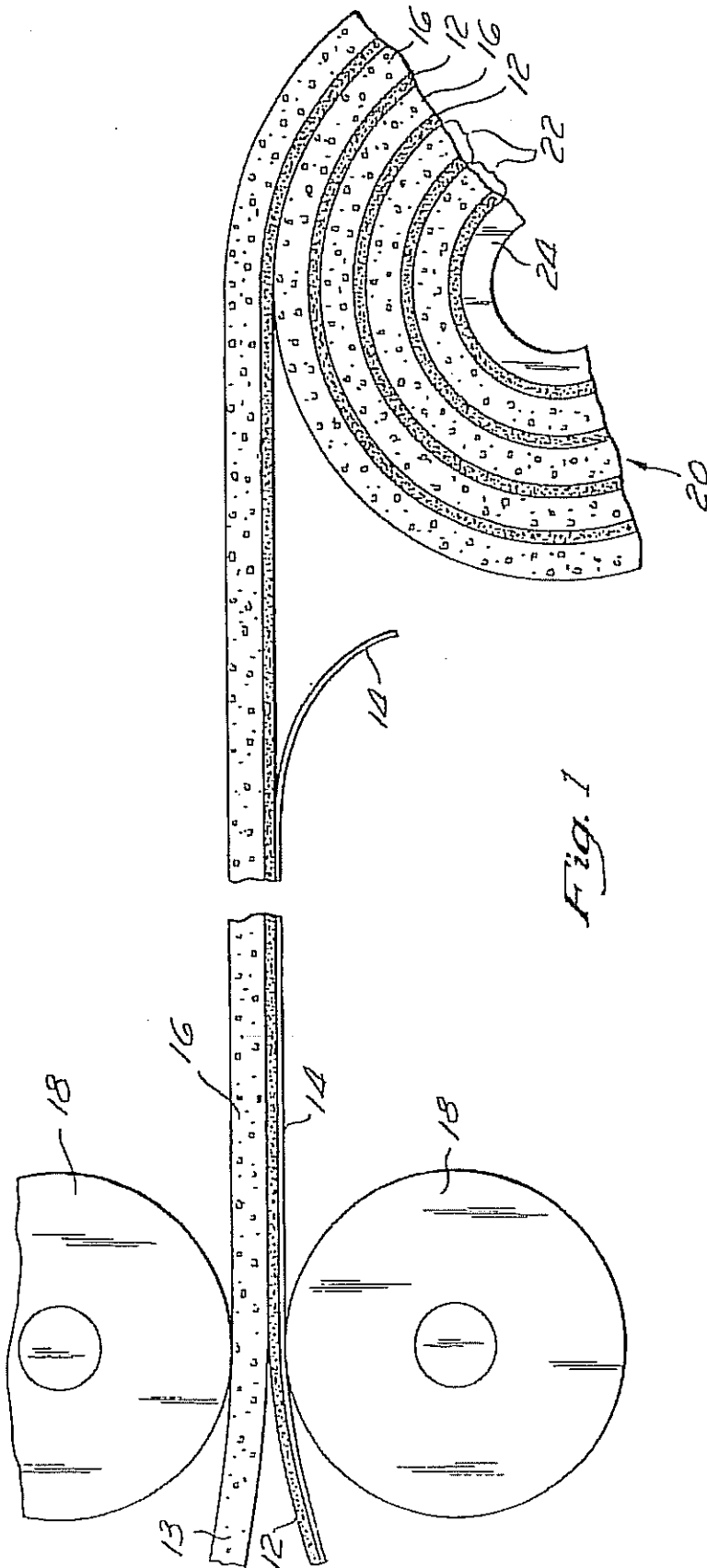
18 Claims, 2 Drawing Figures



U.S. Patent

Nov. 27, 1984

4,484,574



SELF-ROLLED FOAM TAPE WITHOUT RELEASE LAYER AND METHOD OF MAKING SAME**BACKGROUND OF THE INVENTION**

This invention relates to a foam tape which may be used, e.g., as a bandage hold down or an athletic wrap. In particular, the invention relates to a foam tape having a pressure-sensitive adhesive on one side, which can be formed into a roll and unrolled without disrupting the non-adhesive side of the tape or the adhesive and without the use of release paper or a release coating.

The use of adhesive tape in the treatment and prevention of sports injuries is well known. In general, the tape used is a cloth-backed tape, having a pressure-sensitive adhesive on one side thereof. The tape is generally porous and is supplied in roll form. This cloth-backed tape is particularly valuable for wrapping joints to prevent their movement. The tape has no appreciable stretch and, when wrapped several layers deep, it forms a hard, unyielding armour about the wrapped part.

However, conventional cloth-backed adhesive tape is not desirable for applications where limited movement of a joint is desired. Such tape can actually cut the skin when used for such applications, because of the unyielding nature of the material.

The use of stretchable foam material as a wrap for a limb is illustrated in U.S. Pat. No. 2,740,402 to W. M. Scholl. This patent discloses a bandage made of porous latex foam which may be coated with a pressure-sensitive adhesive. However, such a bandage would be unlikely to find wide-spread use in modern day training rooms, because it cannot be self-rolled. The patent recognizes that if the bandage is wrapped upon itself, the adhesive surface and possibly the non-adhesive surface would be disrupted in an attempt to unwrap the bandage. Accordingly, a release paper applied to the adhesive side of the bandage would be necessary in order to roll the tape for shipping. Release paper, however, would be a nuisance in the training room, and the bandage could not be applied directly from the roll to an object to be wrapped without removing the release paper.

An alternative to release paper is a release coating on the back side of the tape itself. Such coatings are illustrated in U.S. Pat. No. 2,458,166 to Homeyer, Jr., and U.S. Pat. No. 3,066,043 to Hechtman et al. The use of a release coating, however, is undesirable, both because of the added expense associated with applying the release layer to the tape in the manufacturing process and because there would be inadequate adhesion between successive layers of release-coated tape when used as an athletic wrap.

Schaar, in U.S. Pat. No. 4,341,209 discloses a backing sheet made of polyethylene foam for pressure-sensitive adhesive finger bandages. Finger bandages are, typically, supplied with a release paper covering the adhesive side of the bandage.

Furthermore, the use of closed-cell polymer foam adhesive strips for weather stripping and insulating is well known. However, to the Applicants' knowledge, none of the foregoing are capable of being self-rolled without the use of release paper.

SUMMARY OF THE INVENTION

In accordance with the present invention, there is provided a pressure-sensitive adhesive tape, comprising a web of closed-cell polymer foam material having a

front side and a back side, the web being wound into a multilayered roll so that the front side is adjacent to the back side in successive windings. A layer of pressure-sensitive adhesive is located between and in direct contact with the adjacent front and back sides of the foam in the roll. The adhesive is releasably attached to the back side and permanently attached to the front side of the foam. Thus, upon unwinding, the pressure-sensitive adhesive coated front side of the tape separates relatively easily from the back side of the tape without disrupting either the adhesive layer or the back side of the foam, with which the adhesive on the front side of the foam was in direct physical contact.

In a preferred embodiment, the tape is a copolymer polyethylene foam having a hypoallergenic acrylic-based adhesive on one side. The thickness of the foam is between about 0.8 mm and about 6 mm, preferably between about 1 mm and about 3 mm, and most preferably about 1.6 mm (1/16 inches). The tape may be from about 12 mm to about 200 mm wide, preferably from about 20 mm to about 130 mm wide, and most preferably between about 24 mm and about 60 mm wide.

The present invention provides a lightweight self-rolled tape that provides support without restraint. It is particularly suitable for athletic applications where some flexibility of the wrapped member is desired. Unlike conventional adhesive tape, the present tape (which is capable of significant elongation) bends easily around complex or compound curves and does not cut the underlying flesh in use. The insulating properties of the tape permit retention of natural body heat.

The cellular structure of the tape also provides shock absorption properties. Injured members are prevented from touching other objects. The tape absorbs both sharp and dull impact, and rebounds for continuous absorption. The tape is waterproof and, because of its reversible self-winding nature, may be unwrapped (rather than cut) for removal.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic representation of the process of manufacturing the foam tape.

FIG. 2 is a perspective view of a roll of tape according to the invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The two basic components of the tape of the present invention are the closed-cell polymer foam backing layer and the adhesive layer. The characteristics of the foam and the adhesive must be carefully matched, in order to provide a tape that may be self-rolled without significant damage to the foam or the adhesive layer upon unrolling.

The foam may be closed-cell polymer foam material having suitable characteristics, such as homopolymers and copolymers of polyethylene, polyurethane, or any of the vinyl-based polymers. The foam must be flexible and must be capable of being formed into sheets of 6 mm thickness or less having a tensile strength (in a foam of 2 mm thickness) of at least 100 g/cm width of tape. Elasticity is also an important property. The foam tape in the desired thickness must be capable of at least 50% elongation, and preferably at least 250%.

Foams containing migratory substances are generally unsuitable. Such substances tend to affect the properties of the adhesive. In addition, they reduce the shelf-life of

the product and may not be suitable for prolonged contact with the skin. It is also desirable that the foam have an internal cellular structure and that the top and bottom surfaces of the foam exhibit continuous closed cell membranes. The membranes inhibit dirt or other substances from becoming ingrained into the foam and are also important in insuring that the self-rolled foam tape may be unrolled without significant disruption of the foam or the adhesive.

One preferred foam material is polyethylene homopolymer or copolymer. A suitable smooth-surfaced polyethylene copolymer foam sheet product is marketed by Voltek, Inc. under the trademark "VOLARA." VOLARA Type E foam is particularly preferred. Type E VOLARA is closed-cell foamed polyethylene-vinyl acetate copolymer that has been irradiation cross-linked. Its closed-cell structure is often called "fine celled". In a 1.6 mm thickness, it has a tensile strength of 620 g/cm width in tape form and may be elongated 250%. VOLARA is hypoallergenic and does not contain migratory plasticizers. Another suitable foam is a cross-linked polyethylene marketed by the Frelen Corporation under the trademark FRELEN XLPE. Closed-cell, foams, such as those marketed by 3-M Corporation, Compo Industries, E.A.R. Corporation, and Monosol, are also suitable, as are Uniroyal's polyvinylchloride-nitrile rubber foams.

The adhesive must be capable of adhering securely to one side of the foam and yet, when cured, must releasably adhere to the other side of the foam. This property permits the tape according to the invention to be self-rolled without the use of release paper or release coatings so that the tape may be self-rolled. Certain acrylic, rubber, urethane, and silicone based adhesives are suitable. A suitable adhesive will have an adhesive shear strength of, for example, 1 kg/6.25 cm² for 167 hours. The viscosity of the adhesive prior to application to the foam will be 500-20,000 centipoises. An even more important determinant of suitability is the cohesive strength of the adhesive. A relatively "hard" adhesive is required if the tape is to be reversibly self-rolled. The adhesive should have a peel strength (as measured by Pressure Sensitive Tape Council adhesion test method 1 (PSTC-1) of 250 g/cm width to 850 g/cm width at 1 mil adhesive thickness, and preferably about 550 g/cm. Crosslinked acrylic adhesives are particularly preferred. It is highly desirable that the adhesive be hypoallergenic. One suitable acrylic-based adhesive is National Adhesives DURO-TAK TM 80-1054. Another is Monsanto 737. Still another is Ashland's ARO-SET TM 1910. The adhesive is preferably dispersed in an aqueous or hydrocarbon vehicle.

FIG. 1 illustrates in part the preferred process for making the foam tape according to the present invention. A layer of suitable adhesive 12 is spread on a release paper 14 by any suitable apparatus, such as a knife over a roll, a knife over a fixed rod or bed, or a Meyer rod. Any suitable release paper may be used, although a double-sided silicone-treated release paper such as H. P. Smith 8054 POLYSLIK TM is preferred. The vehicle is then flashed off by the application of heat to leave a uniform layer of adhesive 12 on the release paper 14. This is preferably done in a zoned air-circulating oven having a final temperature of between about 95° C. and about 135° C., and preferably about 120° C. The adhesive layer is between 0.5 and 2.2 mils thick, and is preferably about 1 mil thick. The adhesive-coated side of release paper 14 is then mated with the front side 13 of

a sheet of foam 16 between the pinch rollers 18 at ambient temperature. Optionally, the foam has been previously treated by a conventional corona discharge process (≤ 46 dyne) to enhance adhesive bonding. A three-layer sandwich of foam 16, adhesive 12, and release paper 14 results. In a preferred embodiment the foam, adhesive, and release paper sandwich is self-rolled and stored for a period of time sufficient to allow the adhesive to set, generally for a minimum of 24 hours. The foam, adhesive and release paper are then unrolled.

As is shown in FIG. 1, the release paper is removed, leaving the adhesive layer 12 permanently affixed to the foam 16. The resulting pressure-sensitive foam tape is then slit to the desired width and self-rolled (without tension) into a multi-layered roll 20 having a plurality of layers 22. Each layer 22 comprises a layer of foam 16 and a layer of adhesive 12. Except for the innermost layer, each layer of adhesive 12 is disposed between two layers of foam 16. In the roll, adhesive 12 is permanently affixed to the front side 13 of the adjacent covering layer of foam and is releasably adhered to the back side 24 of the supporting layer of foam.

The completed product is illustrated in FIG. 2, which is a roll 20 of pressure-sensitive adhesive tape having a foam layer 16 and an adhesive layer 12, in which the adhesive side of each layer is in direct physical contact with the foam material of the underlying layer. The roll is formed around a cylindrical core 24. Because no release coatings or backing papers are used, the adhesive side of each layer is releasably attached directly to the form of the underlying tape.

The tape of the present invention may be used in several ways in industrial, veterinary, athletic, and medical applications. For example, the tape may be used as a protective padding over sterile dressings. It is useful as a wrap about the limb of a mammal to prevent and treat injuries. It may be used to pad fingers, foreheads, bruises, and tendons. It may also be used to pad splints and casts externally, to minimize the effect of jolts and shocks, and may even be used in certain circumstances as a soft cast for a broken bone. Because the tape can be reversibly self-rolled, multiple wrappings of tape may be removed without cutting the tape.

The tape may also be applied to any surface to provide padding. Grips, handles, and sharp surfaces may advantageously be covered. It also has utility as a metal-to-metal gasket.

EXAMPLE 1

A sheet of VOLARA type E polyethylene copolymer foam approximately 140 cm wide and 1.6 mm thick is conventionally treated with a 50 dyne corona discharge. A layer of Ashland's AROSET 1910 adhesive is applied with a knife to a sheet of double-sided silicone treated release paper. The release paper and adhesive then pass through a zoned, heated, air-circulating oven to remove the hydrocarbon vehicle from the adhesive. The final oven temperature is 120° C. The adhesive-coated side of the release paper is next mated with the corona-treated side of the foam. The foam-adhesive-release paper sandwich is then self-rolled. After 24 hours the release paper is removed and the tape is cut into 50 mm wide strips and self-wound on a polyethylene core. The resulting tape is disposed on the roll so that the adhesive side of one layer of tape is in direct physical contact with the foam backing of the adjacent layer. The foam tape may be unwound without significant disruption of either the adhesive layer or the foam

layer. No significant amount of adhesive remains on the foam side of the tape. The resulting tape is strong, light, shock-absorbant and adheres strongly but releasably to virtually any clean, dry surface including glass, metal, fabric, plaster casts, and human skin.

EXAMPLE 2

A strip of tape 50 mm wide, prepared according to Example 1, is wrapped around the limb of a mammal and over an ankle joint in multiple overlapping layers. The resulting wrap permits some movement of the ankle while providing support. The wrapping also cushions the wrapped portion against blows and significantly reduces the possibility of bruising and cartilage, tendon, and ligament injury.

Although this invention has been described in terms of certain preferred embodiments, other embodiments that are apparent to those of ordinary skill in the art are also within the scope of this invention. Accordingly, the scope of the invention is intended to be limited only by the appended claims.

What is claimed is:

1. A pressure-sensitive adhesive tape, comprising: a web of closed-cell polymer foam material having a front side and a back side; said web being wound into a multi-layered roll so that said front side is adjacent to said back side in successive windings;
2. The tape of claim 1, wherein said adhesive is hypoallergenic.
3. The tape of claim 2, wherein said adhesive is an acrylic adhesive.
4. The tape of claim 2, wherein said polymer is polyethylene.
5. The tape of claim 4, wherein said foam is a polyethylene copolymer and said front and said back sides are substantially smooth.
6. The tape of claim 4, having a thickness of between about 0.8 mm and about 6 mm and a width of between about 12 mm and about 200 mm.
7. The tape of claim 6, wherein said adhesive is between about 0.5 and about 2.2 mils thick and has a PSTC-I peel strength between about 250 g/cm width and about 850 g/cm width at 1 mil adhesive thickness.
8. The tape of claim 6, wherein said adhesive has a PSTC-I peel strength of about 550 g/cm width at 1 mil adhesive thickness.

9. The tape of claim 4, having a thickness of between about 1 mm and about 3 mm and a width of between about 20 mm and 200 mm.

10. An article of manufacture, comprising a web of closed-cell polyethylene foam material having a front side and a back side; a layer of pressure-sensitive adhesive permanently affixed to said front side; said adhesive layer being releasably attachable to said back side of said foam to permit the front side of one part of said web to be adhesively attached to the back side of another part of said web and then separated without substantially disrupting said back side.

11. The article of claim 10, wherein said adhesive is hypoallergenic.

12. The article of claim 10, wherein said adhesive is between about 0.5 and about 2.2 mils thick and has a PSTC-I peel strength between about 250 g/cm width and about 850 g/cm width at 1 mil adhesive thickness.

13. The article of claim 12, wherein said adhesive has a PSTC-I peel strength of about 550 g/cm width at 1 mil adhesive thickness.

14. The article of claim 11, wherein said polymer is polyethylene.

15. The article of claim 11, wherein said adhesive is an acrylic adhesive.

16. The article of claim 10, wherein said article is formed into a roll having successive layers and the adhesive of one layer is directly and releasably adhered to the foam of another layer.

17. The article of claim 11, wherein said article is a bandage applied to a limb of a mammal in overlapping layers, the adhesive of one layer being in direct physical contact with the foam of an adjacent layer.

18. A process for making a self-rolled pressure-sensitive adhesive foam tape, comprising the steps of: subjecting a closed-cell polymer foam web to corona discharge; applying a layer of pressure-sensitive adhesive to a release paper; mating the foam web to the adhesive; forming the foam web, the adhesive, and the release paper into a multi-layered roll; unrolling the web, the adhesive, and the release paper; removing the release paper, leaving a pressure-sensitive adhesive tape having a foam backing side and an adhesive side; and self-rolling the pressure-sensitive adhesive tape into a multi-layered roll so that the adhesive side of one layer is in direct physical contact with the foam side of an adjoining layer.

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ATTORNEY DOCKET NO. 5923.0001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF	:	Goecke
TITLE	:	Adhesive Tape
SERIAL NO.	:	10/674,108
FILING DATE	:	September 29, 2003
ART UNIT	:	1788
CONFIRMATION NO.	:	2438
ATTORNEY DOCKET NO.	:	5923.0001

Exhibit E

Johnston U.S. Patent 3,985,153

United States Patent [19]

[11] 3,895,153

Johnston et al.

[45] July 15, 1975

[54] FRICTION-SURFACE SHEET

[75] Inventors: Manley R. Johnston, St. Paul; Roger P. Goepfinger, N. St. Paul, both of Minn.

[73] Assignee: Minnesota Mining and Manufacturing Company, St. Paul, Minn.

[22] Filed: Oct. 5, 1973

[21] Appl. No.: 403,827

[52] U.S. Cl. 428/141; 156/209; 156/220; 264/284; 428/493; 428/494

[51] Int. Cl. B32b 3/26

[58] Field of Search 161/116, 231, 252, 253, 161/256, DIG. 3, 255; 117/8, 10; 264/284; 156/209, 220

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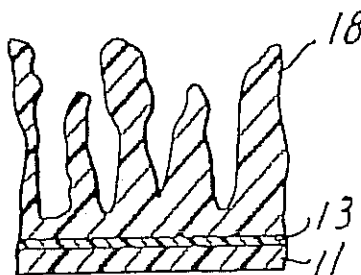
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Primary Examiner—George F. Lesmes
Assistant Examiner—Stanley S. Silverman
Attorney, Agent, or Firm—Alexander, Sell, Steldt and DeLaHunt

[57] ABSTRACT

A flat, backing layer of uniform thickness of biaxially oriented, heat set polyethylene terephthalate having adherently bonded to its upper surface a textured, tough, scuff-resistant, weather-resistant layer of certain thermoplastic ethylenic copolymers, and a normally tacky pressure-sensitive adhesive layer adherently bonded to its lower surface, provides a friction-surface sheet for use on stairs, in bath tubs and showers, and on other surfaces which may be inherently undesirably slippery. The friction-surface sheet is made by coating a thin, ultra-violet light transmissive self-sustaining layer of a coherent film forming thermoplastic polymer onto the polyethylene terephthalate layer, irradiating the interface between the layers to cause adherent bonding, coating the ethylenic copolymer on top of the polymer layer by melt fusion, and embossing the copolymer layer to provide the textured surface. Pressure-sensitive adhesive is then applied to the lower surface of the sheet to facilitate mounting thereof on any of a variety of substrates.

6 Claims, 6 Drawing Figures



1975 JUL 15 1975

3,895,153

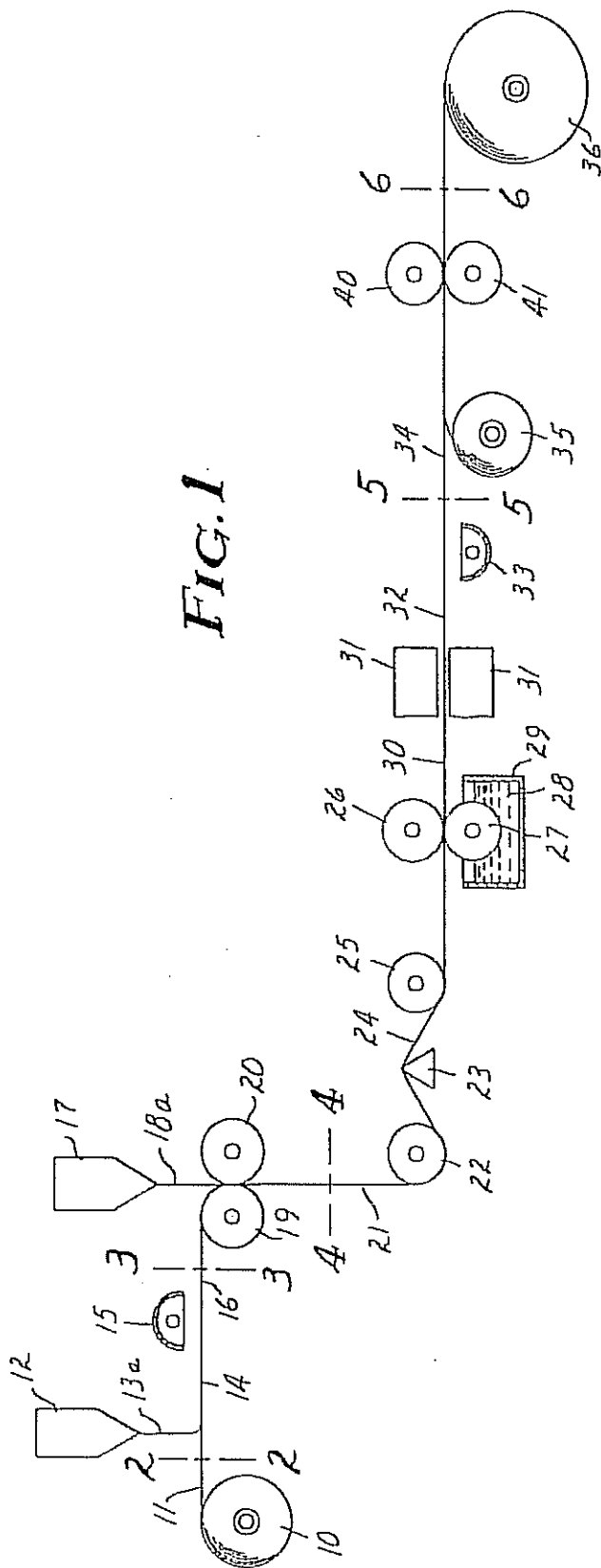


FIG. 1

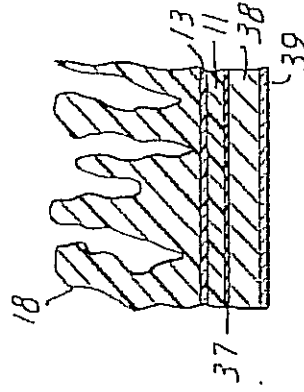


FIG. 6

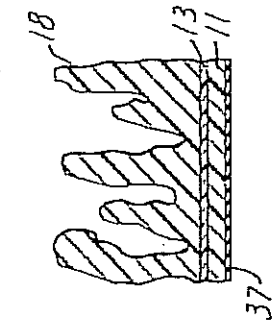


FIG. 5

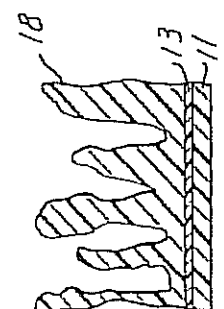


FIG. 4

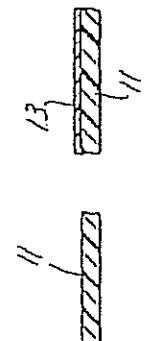


FIG. 3

FIG. 2

FRICTION-SURFACE SHEET

BACKGROUND OF THE INVENTION

This invention relates to friction-surface sheet material.

Typically, present friction-surface or non-skid sheet materials are made by adhering granules to resin-impregnated fabric backing or plastic film by means of adhesive which is usually pigmented and overcoats the granules to provide a pleasing surface, both esthetically and underfoot. Examples of such products may be seen in U.S. Pat. Nos. Re.25,788, 3,030,251, 3,578,550, 3,030,223 and British Pat. No. 971,741. While such products have seen considerable commercial success, they have certain inadequacies which the present invention eliminates.

Since these prior art sheet materials are all formed by depositing granules on a backing sheet and overcoating the granules with adhesive, the resultant product is inherently subject to the formation of air pockets among the adhesive covered granules. Such air pockets will rupture, providing sites for bacteria to accumulate and flourish, staining the sheet and creating a health hazard. Additionally, while seemingly simple to produce, the friction-surface sheet material containing granules requires extremely careful coating conditions and particle size control, else a non-uniform surface product will be produced. Furthermore, while these prior art granule-containing sheets at first appear attractive, they may lose their attractive uniform surface as their upper surface of pigmented adhesive is abraded away during use, exposing the granules contained within, which are usually not the same color.

While, at first appearance, an easy solution to the inadequacies discussed above would seem to be to simply emboss a thermoplastic sheet to impart a friction surface, attempts to produce such a sheet have yielded inferior products. Embossing an unsupported layer of a tough scuff-resistant thermoplastic resin, however, results in a product which lacks dimensional stability and easily distorts in use. Laminating a layer of embossable thermoplastic resin to a dimensionally stable backing such as heat-set, biaxially oriented polyethylene terephthalate is difficult because of the latter's non-adherent surface, which virtually defies permanent adhesion thereto by resins having the desired properties for the embossed layer. Products have been made by interposing a normally tacky and pressure-sensitive adhesive layer between the backing layer and the embossed upper layer, but these are expensive to make and eventually delaminate in use or upon subsequent removal from a substrate after use, leaving a difficult to remove residue.

Despite the fact that friction-surface sheets have been known for more than a decade, no adequate solution has been provided for the inadequacies set forth above, prior to the present invention.

SUMMARY

The present invention provides a friction-surface sheet which can be rapidly and economically produced in large quantities, without the use of granules and without the special coating techniques associated therewith. The sheet has the desired frictional characteristic, dimensional stability, abrasion resistance, moisture resistance, tear resistance, and crack resistance for the use described herein, combined with ade-

quate elongation, stretchability, and deformability to provide a long-lasting, effective, frictional surface sheet under virtually all climatic conditions.

The friction-surface sheet of the invention is comprised of a flat layer of biaxially oriented, heat-set polyethylene terephthalate of uniform thickness and having adherently bonded to its upper surface an embossed, textured, tough, scuff-resistant, weather-resistant layer of certain thermoplastic ethylenic copolymers, and a pressure-sensitive adhesive layer adherently bonded to its lower surface.

The friction-surface sheet can be made by coating a thin, ultra-violet light transmissive, self-sustaining, coherent layer of film-forming thermoplastic polymer onto the polyethylene terephthalate layer, irradiating the layer interface with ultra-violet light for a time and at an intensity sufficient to create an adherent bond between the layers, coating molten ethylenic copolymer on top of the polymer layer to provide an embossable layer, and embossing the copolymer layer to impart the desired-textured surface. Other ways of obtaining this laminated structure will also be disclosed. Normally tacky and pressure-sensitive adhesive is applied to the lower surface of the sheet thus described to facilitate mounting thereof to any of a variety of substrates.

BRIEF DESCRIPTION OF THE DRAWING

Understanding of the invention will be facilitated by referring to the accompanying drawing, wherein:

FIG. 1 is a schematic representation of the presently preferred method of preparing the friction-surface sheet of the invention;

FIG. 2 is a cross sectional view taken at line 2—2 of FIG. 1;

FIG. 3 is a cross sectional view taken at line 3—3 of FIG. 1;

FIG. 4 is a cross sectional view taken at line 4—4 of FIG. 1;

FIG. 5 is a cross sectional view taken at line 5—5 of FIG. 1; and

FIG. 6 is a cross sectional view showing the friction-surface sheet of the invention and is taken at line 6—6 of FIG. 1.

In accordance with the invention and as depicted in FIGS. 2—6, flat, biaxially oriented, heat-set polyethylene terephthalate film 11 of substantially uniform thickness is adherently bonded to thermoplastic polymer layer 13 which is adherently bonded to embossed layer 18 formed of a tough, flexible, scuff-resistant, weather-resistant, thermoplastic ethylenic copolymer. The opposite surface of polyethylene terephthalate film 11 is adherently bonded to normally tacky and pressure-sensitive adhesive layer 38 which may be protected prior to use by a suitable release liner 39. A prime coating 37 of rubber may be desired when rubber-base adhesive compositions are used as the pressure-sensitive layer.

PRESENTLY PREFERRED EMBODIMENT

As shown in FIG. 1, the friction-surface sheet material is prepared by first coating biaxially oriented heat-set polyethylene terephthalate film 11 obtained from supply roll 10. An ultra-violet light transmissive self-sustaining, coherent layer of thermoplastic polymer primer is extruded as a molten sheet 13a from extruder 12 onto the upper surface of film 11 to provide coated film 14. Coated film 14 is irradiated by ultra-violet light

source 15 through the coating at an intensity and for a time sufficient to cause adherent bonding between the coating and the polyethylene terephthalate film to produce primed laminate 16. (Further description of ultra-violet light coating techniques may be found in U.S. Pat. No. 3,188,266, incorporated herein by reference.) Molten copolymer as sheet 18a is extruded from extruder 17 onto the primed surface as the freshly coated composite film is simultaneously passed between embossing roll 20 and backup roll 19 to produce embossed film 21. After hardening, film 21 is passed under tension over decurling edge 23 between idler rolls 22 and 25 to make the textured surface convex. Decurled laminate 24 is then primed on its lower surface by roll coating a rubber/solvent priming solution 28 contained in vessel 29 with coater roll 27 which operates in opposition to backup roll 26. Rubber-coated composite film 30 is then dried of solvent at drying station 31 by use of either a circulating air source, oven, hot can dryer, or a combination thereof, providing rubber coated laminate 32. Laminate 32 is exposed to a second ultra-violet light source 33 through the rubber coat and irradiated therewith to cause a permanent adherent bond between the rubber layer and the polyethylene terephthalate film surface, providing composite film 34. Pressure-sensitive adhesive, as a self-supporting film (carried on a suitable release liner to prevent blocking) is then dispensed from roll 35 so that its exposed adhesive surface contacts the rubber-primed surface and this composite is passed between nip rolls 40 and 41 to consolidate the layers into an integral sheet which is wound as roll 36 for storage.

FIGS. 2-6 show the various stages of formation of the laminate formed by the process of FIG. 1. It is, of course, understood that the process may also be accomplished in individual steps wherein, after each process step which produces a handleable intermediate, the intermediate may be stored, and thereafter completed. For example, it may be desired to do some of the process steps at one location and others at another location.

Although the presently preferred embodiment specifies rubber-base normally tacky and pressure-sensitive adhesive applied over an initial prime coat, that is not the only type normally tacky adhesive which can be used. Other normally tacky and pressure-sensitive adhesives useful in the present invention will be exemplified and illustrated hereinafter.

Other ways of forming the friction-surface sheet material of the invention are possible and within the scope of the invention. For example, the polyethylene terephthalate and the copolymer layer may be coextruded to provide an integral composite film which can subsequently be biaxially oriented and heat-set. Additional copolymer is then coated on the composite's copolymer surface by melt fusion to provide the desired thickness for embossing as described above. Thereafter, adhesive is applied to the unembossed lower surface by the method disclosed above or by conventional adhesive coating techniques.

Coextrusion is a well known process wherein layers of thermoplastic materials are brought into contact while they are still molten. Formation and adhering of the layers takes place inside or immediately outside the extruding die, forming an integral composite. The composite film is thereafter endowed with improved physical properties by biaxial orientation and heat-setting.

Biaxial orientation, as is also well known, involves stretching the film in two directions normal to each other, generally in the machine direction and at right angles thereto. In a typical operation, the freshly formed molten composite film is fed onto a cooling drum to produce a quenched amorphous film, which is briefly heated and stretched in the machine direction, and then conducted through a tenter frame where it is stretched transversely with moderate heating. Machine direction stretching may be accomplished by passing between two sets of nip rolls the second set rotating at a higher speed than the first. Stretching typically increases the film area by a factor of at least six, the stretching usually being equal in each direction.

Heat-setting, or heat stabilization, of the stretched composite film is accomplished by restraining the film at its stretched dimension and heating briefly, then quenching. Such heating is typically in the range of 175°-240°C.

DETAILED DESCRIPTION

The backing sheet of the friction-surface sheet material of the invention is, as previously discussed, formed of biaxially oriented, heat-set polyethylene terephthalate. Such a material is well known and commercially available under the trade designations "Mylar" and "Scotch Par". This film is noted for its toughness, dimensional stability and inertness under a wide variety of conditions. For the invention, it has been found useful to use such film at thicknesses on the order of 1 to 5 mils. Film widths will vary depending upon the processing equipment, typically between 24 and 60 inches.

The priming polymer coated on the upper surface of the polyethylene terephthalate film is a film-forming thermoplastic capable of being formed into highly coherent, self-sustaining film which is transmissive to ultra-violet light, capable of forming an adherent bond with the polyethylene terephthalate film under the influence of ultra-violet irradiation, and capable of forming an adherent bond with the upper copolymer layer discussed hereinafter by melt fusion. The priming polymer layer should be thin enough to permit irradiation through its thickness, not contain ultra-violet light absorbing fillers, and be sufficiently coherent to resist cohesive failure when used as herein disclosed. Typically, the prime layer will be on the order of 0.5 to 3 mils thick. Suitable polymeric materials found useful for the prime layer include polymers of ethylene such as polyethylene and ethylene ethyl acrylate and ethylene vinyl acetate copolymers.

The upper, embossed layer is of an ethylene copolymer which is tough, scuff-resistant, moisture-resistant, weather-resistant, and flexible. This copolymer should also have a hardness value within the range of about 60-95 Shore A durometer (preferably 70-90), be resistant to permanent deformation at temperatures below about 90°C, have a dynamic coefficient of friction with respect to dry leather greater than 0.45 when embossed, have a tensile strength of at least 700 psi, and have an elongation of at least 100%.

The dynamic coefficient of friction of the embossed layer is determined by utilizing the procedure described in *Military Specification: Walkway Compound, Non-slip, and Walkway Matting, Non-slip* (MIL-W-5044C), dated Aug. 25, 1970. According to this publication, two pieces of vegetable-tanned cattlehide sole leather, ¼ by ½ inch by 10 inches are bonded to a 1 by

5 by 10.5 inch block of maple. Weights are added to provide a total weight of 20 pounds. The strips extend lengthwise symmetrically and about 4 inches apart of the 5 by 10.5 inch face of the block, with the flesh surfaces of the leather exposed. The exposed leather surfaces are lightly sanded before each run with 2/0 garnet paper and wiped clean of sanded particles with a cloth. The test block is placed on the leather strips on one end of an 18 inch long by 6 inch wide test panel adhered to a level surface and the load required to pull the block 7 inches across the panel at a speed of 20 inches per minute is recorded. Three runs on each test specimen are made and averaged. The dynamic coefficient of friction is the average load divided by the weight of the block.

Embossed polymer surfaces having a dynamic coefficient of friction less than 0.45 on dry leather are deemed too slippery for use as nonslip or friction-surface sheet material.

Copolymers suitable for use in the invention and having the properties described above include ethylenic copolymers (and-terpolymers) such as prepared from ethylene and olefinically unsaturated monomers such as alkyl acrylates, propylene, vinyl acetate, butadiene, hexadienes, and combinations thereof. Commercially available forms of such copolymers include ethylene ethyl acrylate copolymers such as that sold under the trade designations "Bakelite DPD 6169" and "Bakelite DPD 6182", ethylene vinyl acetate such as that sold under the trade designations "Bakelite DQD 1868", "Bakelite DQD 6182", "Elvax 260" and Ultrathene UE 645X", "Ultrathene 637", "Ultrathene 630-81" and "Ultrathene 631", and ethylene propylene diene terpolymers such as those sold under the trade designations "Nordel 1500", "TPR 1900" and "TPR 2000".

The copolymer comprising the upper surface of the friction-surface sheet of the invention may incorporate fillers or pigments to impart color or improve the physical properties in this layer. Such fillers, which include carbon black, clays, magnesium oxide, reclaimed rubber, fine scrap rubber particles, process oils, and other materials known in the art, can be used up to 70% by weight of the total weight of this layer. The fillers may be added to the copolymer prior to extruding it onto the backing film, by milling, mixing such as in a "Banbury" machine, and in other ways known in the art.

The copolymer layer will typically have an average thickness on the order of 10 to 60 mils, and when embossed, will typically have a thickness on the order of 3 to 25 mils or more at its thinnest portion (at the valleys).

The rubber prime coat, for promoting adhesion between a rubber base pressure-sensitive adhesive and the lower surface of the polyethylene terephthalate film, may be applied as a solution of natural rubber in an organic solvent such as heptane or trichloroethylene, typically on the order of 2 to 3% by weight rubber. This prime layer, which will be typically less than about 0.5 mil thick, can be eliminated and the rubber-base adhesive merely coated directly by conventional techniques upon the polyethylene terephthalate backing film surface, but priming provides a bond of superior strength between the backing film and the rubber base adhesive and, therefore, is preferred.

The rubber base adhesive most preferred for use on the friction-surface sheet material of the invention is a tacky, pressure-sensitive, abrasion-resistant, bakelized

crude rubber adhesive. This type of adhesive is disclosed in U.S. Pat. Nos. 2,269,712, 2,410,079, and 2,177,627, each of which is incorporated herein by reference. Other normally tacky and pressure-sensitive adhesives which can be used include the tackified AB block copolymer adhesives disclosed in U.S. pat. application Ser. No. 146,473, filed May 21, 1971, now U.S. Pat. No. 3,787,531, by Carl A. Dahlquist and Vasant V. Kolpe, which application is incorporated herein by reference and acrylate adhesives disclosed in U.S. Pat. No. Re. 24,906, also incorporated by reference. The pressure-sensitive adhesive layer is preferably on the order of 2 to 10 mils in thickness.

The roll used to emboss the copolymer layer has a surface which is the counterpart of that desired for the friction-surface sheet material of the invention. The roll surface may be generated by engraving, rough sandblasting, or other ways which involve imparting a textured surface to a smooth cylindrical metal roll. The textured surface may have a uniform pattern, include indicia, or may be of random nature, as long as it embosses the desired textured surface into the sheet material.

One method of preparing an embossing roll suitable for use in the invention is by shaping an original which may be a prior art friction-surface sheet into a tubular form (with the textured surface forming the inner surface of the tube), supporting the tube in a temporary rigid tubular structure, sensitizing the textured surface so that metal can be electrically deposited thereon, and electrically depositing metal to build up a rigid structure suitable for use as an embossing roll. The temporary rigid structure and the original are then removed to reveal the embossing roll which can be supported for rotation. This method of producing an embossing roll is disclosed in U.S. Pat. No. 2,749,294.

The invention is further illustrated by reference to the following examples, in which all parts and percentages are by weight unless otherwise noted.

EXAMPLE I

A 26 inch wide, 3 mil thick continuous sheet of biaxially oriented, heat-set polyethylene terephthalate (commercially available under the trade designation "Scotch Par" from the 3M Company) was primed by extruding a 1 mil thick layer of ethylene ethyl acrylate copolymer having a melt index of 6 (commercially available under the trade designation "Bakelite DFDA 6169" from the Union Carbide Company) thereon as a uniform layer. The extruder has barrel temperatures of 150°C, 200°C, 260°C, 280°C and 290°C, respectively, gate temperature of 290°C, die neck temperature of 290°C, die temperature of 290°C, and end plate temperatures of 290°C. The coating was permitted to cool and the coated polyethylene terephthalate film was passed, film side in, around a 6 ft. diameter hot can (130°C surface temperature) approximately 1 inch from 120 equally spaced type G 64T6 tubular ultra-violet lights arranged in 270° wrapped within a shroud around the hot can to provide an irradiation residence time of about 0.2 minute, with the coated side facing the ultra-violet lights. The polyethylene terephthalate film was then coated using a second extruder on the primed surface with a blend of (1) 94.5 parts ethylene ethyl acrylate copolymer consisting of 18% ethylacrylate and 82% ethylene (sold under the trade designation "Bakelite DFD 6169" by the Union Carbide Co.)

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-Continued

(2) 5 parts of a predispersed mixture of one titanium dioxide in one part low density polyethylene available under the trade designation "PMS 08500" (3) 0.2 part of a bacteriostat (sold under the trade designation "Vancide 89") and (4) 0.25 parts of an ultra-violet light absorber ("Cynasorb UV531") at an average thickness of 15 mils. The second extruder has barrel temperatures of 120°C, 140°C, 160°C and 165°C, respectively, a neck temperature of 145°C, and a die temperature of 155°-170°C. The coated film was then passed between an 8 inch diameter textured surface embossing roll and an 8 inch diameter rubber backup roll having a Shore A hardness value of 60-80 with the copolymer surface exposed to the embossing roll, providing an embossed textured surface ethylene ethyl acrylate copolymer layer. Since this film had a tendency to curl away from the polyethylene terephthalate side, it was decurled by passing between idler rolls over a decurling tension bar while under tension of about 400 pounds with the polyethylene terephthalate surface against the bar. The decurled laminate was roll coated on the remaining polyethylene terephthalate surface with a 2.8% natural rubber/heptane solution having a viscosity of about 150-200 cps. A very thin rubber coating (less than 0.5 mil in thickness) resulted, once the coating had been dried by passing it over a 68°C hot can. The rubber coating was irradiated from a distance of 1 inch with an ultra-violet light source consisting of 18 G 64T6 lamps arranged ¾ inches apart in a 2½ feet linear pattern with a residence time of 0.1 minute. Thereafter, a self-supporting, 4 mil thick, bakelized pressure-sensitive tacky adhesive composition prepared by mixing of equal parts of Part A and Part B described in the table below and sufficient heptane/ethanol (97/3) solution to make the viscosity 5000 cps, coating the mixture on a silicone oil coated paper release liner, and evaporating the solvent. The resultant adhesive layer was laminated to the rubber-primed side of the polyethylene terephthalate film by passing the superimposed layers between nip rolls consisting of an 11.5 inch diameter metal roll and 9.5 inch diameter rubber roll having a Shore A hardness of approximately 60 to 80 at a roll to roll pressure of 15 pounds per inch of width of contact.

Rubber Base Pressure-Sensitive Adhesive		
Part A		Parts by Weight
Ingredient		
Crude rubber		100.0
Zinc oxide		66.00
Anhydrous lanolin		6.75
Natural pine rosin ("Nelio N Gum")		6.75
Oil-soluble heat-reactive para-substituted phenol aldehyde tackifier resin ("Bakelite CKR-1634")		4.38
Heptane		226
Denatured ethyl alcohol		25
Part B		Parts by Weight
Ingredient		
Pale crepe rubber		100
Polyterpene tackifier ("Piccolyte-S-115" resin)		47.2
Zinc stearate having a melting point of 164°C and acid number of zero ("Zircal Resin")		9.42
Tricresyl phosphate		4.69
2,5-di-tert-amylhydroquinone antioxidant ("Santovar A")		2.03

Part B		
Ingredient	Parts by Weight	
Oil-soluble heat-reactive para-substituted phenol aldehyde tackifier resin ("Bakelite CKR-1634")	5.69	
Titanium dioxide	3.86	
Carbon black	0.08	
Cyclohexylamine	0.02	
Denatured ethyl alcohol	18.82	
Toluene	18.82	
Heptane	451	

The resultant friction-surface sheet (less the release liner), which had a roughened surface, overall thickness of 30 mils and an average thickness of 23 mils, provided an excellent underfoot friction-surface when cut to size and applied to stairs, bath tubs and showers.

EXAMPLE 2

An embossed layer adherently bonded to polyethylene terephthalate backing film was prepared according to Example 1 and to such a structure was bonded 5 mils of a polystyrene polyisoprene AB block copolymer prepared according to Example 1 of aforementioned U.S. patent application Ser. No. 146,473. The A block was polystyrene having a molecular weight of 45,000 and the B block was polyisoprene having a molecular weight of 105,000. The adhesive was of the following ingredients:

35	AB Block Copolymer Adhesive	
	Ingredients	Parts
	AB block copolymer	100
	Petroleum resin tackifier ("Wingtack 95")	25
	Antioxidant ("Irganox 1076")	2
40	Titanium dioxide	0.5

EXAMPLE 3

A friction-surface sheet product was formed by adhering to the polyethylene terephthalate surface of embossed upper layer/backing film of Example 1 a pressure-sensitive adhesive containing the AB block copolymer described in Example 2 and multi-block copolymer (3 block copolymer) sold under the trade designation "Kraton 1108". The adhesive contained the following ingredients:

55	AB/Multi-Block Copolymer Adhesive		
	Ingredients		Parts
	Multi-block copolymer ("Kraton 1108")		23
	AB block copolymer		77
	Petroleum resin tackifier ("Wingtack 95")		35
60	Antioxidant ("Irganox 1076")		2
	Titanium dioxide		0.5

EXAMPLE 4

The friction-surface sheet material's adhesive was of a multi-block copolymer of the following ingredients:

Multi-Block Copolymer Adhesive

Ingredients	Parts
Multi-block copolymer ("Kraton 1108")	100
Polyterpene tackifier resin ("Piccolyte S-115")	100
Aliphatic process oil ("Sun Par 2280")	10

EXAMPLE 5

The friction-surface sheet material's adhesive was a normally tacky and pressure-sensitive 10:90 acrylic acid:isooctyl arylate copolymer such as described in Example 7 of U.S. Pat. No. Re.24,906.

EXAMPLE 6

A friction-surface sheet material was prepared according to Example 1 except the upper surface polyethylene terephthalate prime coating was replaced by an ethyl vinyl acetate copolymer (sold under the trade designation "Bakelite DQDA 3737" by the Union Carbide Co.) For this material the extruder had barrel temperatures of 110°C, 130°C and 150°C, a neck temperature of 150°C, a die body temperature of 150°C and gate temperatures of 150°C.

EXAMPLE 7

The polyethylene terephthalate backing film was prepared by coextrusion with thermoplastic polyester ("Hytrel 4055") to form a 3 mil composite film having a 0.75 mil polyethylene terephthalate layer, after orientation and heatsetting. The polyester (Hytrel 4055) extruder had barrel temperatures about 140°C, 185°C, 190°C and 225°C, and a die temperature about 225°C. The composite was oriented at 80°C by stretching 2.8 times in the machine direction and 2.8 times in the transverse direction, and heat-set by heating at 190°C for 12 seconds.

The polyester (Hytrel 4055) surface was coated (without additional primer) with ethylene ethyl acrylate copolymer ("Bakelite DFDA 6169), embossed and bonded to an adhesive layer as described in Example 1.

EXAMPLE 8

A 2 mil thick polyethylene ("DFD 4947") prime coating was extrusion coated on 2 mil thick biaxially oriented, heat-set polyethylene terephthalate backing and irradiated according to Example 1. The polyethylene layer surface was overcoated with a mixture of 99 parts ethylene propylene diene terpolymer ("TPR-2000") and 1 part carbon black which was embossed to provide a 42 mil thick embossed laminate. The underside of the laminate (the polyethylene terephthalate surface) was primed with natural rubber as described in Example 1 and coated with a pressure-sensitive adhesive consisting of the ingredients designated Part B in Example 1.

EXAMPLE 9

A polyethylene terephthalate film primed on its upper surface as described in Example 1 was overcoated with ethylene vinyl acetate copolymer (sold under the trade designation "Ultrathene 645") and embossed as described in Example 1 to provide a friction-surface sheet.

EXAMPLE 10

The embossable copolymer upper layer was a mixture of (1) 20 parts ethylene vinyl acetate copolymer ("Elvax 260") (2) 20 parts powdered polyethylene ("Microthene 715") and (3) 60 parts shredded scrap rubber tire filler (screened through "Tyler" 12 mesh screen having about 1.41 mm openings). The scrap rubber was a filler which did not undesirably increase the hardness. The copolymer was ground to a powder and mixed with the polyethylene and filler in a two stage polyethylene extruder having barrel temperatures of 140°C, 190°C, 200°C and 205°C, a neck temperature of 205°C and a die temperature of 200°-210°C. The copolymer was coated on a primed polyethylene terephthalate film prepared according to Example 1 and embossed to produce a friction-surface sheet.

What is claimed is:

1. Friction-surface sheet material especially useful for providing a safe frictional walk-on surface for stairs, in bath tubs and showers, and on other surfaces which may be inherently undesirably slippery, comprising in combination:

a heat-set, biaxially oriented, polyethylene terephthalate backing having a thickness of about 1 to about 5 mils,

an ultraviolet light transmissive ethylene polymer prime layer, adherently bonded to one major surface of said polyethylene terephthalate backing,

adherently bonded to the primed surface of said backing a layer of embossed, textured, tough, scuff-resistant, weather-resistant, flexible ethylenic copolymer material having a Shore A durometer hardness value within the range of about 60-95, said layer being resistant to permanent deformation at temperatures below 90°C, having a tensile strength of at least 700 psi, a dynamic co-efficient of friction greater than 0.45 and an elongation of at least 100%; and

about 2 to about 10 mils of normally tacky and pressure-sensitive adhesive uniformly coated over and adherently bonded to the opposite major surface of said backing.

2. The friction-surface sheet material of claim 1 wherein said ethylenic copolymer is an ethylenic copolymer or terpolymer formed from ethylene and olefinically unsaturated monomers selected from the group consisting of alkyl acrylates, propylene, vinyl acetate, butadiene, hexadienes, and combinations thereof.

3. The friction-surface sheet material of claim 1 including a natural rubber prime layer interposed between said polyethylene terephthalate layer and said adhesive layer, and wherein said adhesive is a rubber base adhesive.

4. The friction-surface sheet material of claim 1 wherein said ethylenic copolymer layer is formed of ethylene acrylate copolymer.

5. The friction-surface sheet material of claim 1 wherein said adhesive is selected from the group consisting of acrylate adhesives and AB block copolymer adhesives.

6. The friction-surface sheet material of claim 5 wherein said AB block copolymer adhesive also contains multi-block copolymer having at least 3 connected polymer blocks.

* * * * *

UNITED STATES PATENT OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 3,895,153

DATED : July 15, 1975

INVENTOR(S) : Manley R. Johnston and Roger P. Goepfinger

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 1, line 12, change "25,788" to --25,778--

Col. 7, line 1, change "one titanium" to--one part titanium--

Col. 9, line 15, change "arylate" to --acrylate--

Claim 4, line 3, after "ethylene" and before "acrvlate",
--ethyl-- should be inserted.

Signed and Sealed this

fourteenth Day of October 1975

[SEAL]

Attest:

RUTH C. MASON
Attesting Officer

C. MARSHALL DANN
Commissioner of Patents and Trademarks

ATTORNEY DOCKET NO. 5923.0001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF	:	Goecke
TITLE	:	Adhesive Tape
SERIAL NO.	:	10/674,108
FILING DATE	:	September 29, 2003
ART UNIT	:	1788
CONFIRMATION NO.	:	2438
ATTORNEY DOCKET NO.	:	5923.0001

Exhibit F

Reeves U.S. Patent 5,508,084

United States Patent [19][11] Patent Number: **5,508,084**

Reeves et al.

[45] Date of Patent: ***Apr. 16, 1996**[54] **REPOSITIONABLE ARTICLES HAVING A MICROSTRUCTURED SURFACE, KITS FOR PRODUCING SAME, AND METHODS OF USE**[75] Inventors: Mark E. Reeves, Maplewood;
Diwakaran A. Ratnam, St. Paul, both
of Minn.[*] Notice: The term of this patent shall not extend
beyond the expiration date of Pat. No.
5,234,740.[73] Assignee: Minnesota Mining and
Manufacturing Company, St. Paul,
Minn.[21] Appl. No. **248,863**[22] Filed: **May 24, 1994****Related U.S. Application Data**[63] Continuation-in-part of Ser. No. 929,685, Aug. 13, 1992,
which is a continuation-in-part of Ser. No. 751,147, Aug. 28,
1991, Pat. No. 5,234,740.[51] Int. Cl.⁶ **B32B 3/28**[52] U.S. Cl. **428/172; 428/141; 428/156;
428/346**[58] Field of Search **428/156, 172,
428/343, 76, 167, 178, 174, 95, 96, 346,
354, 542.8, 40**[56] **References Cited****U.S. PATENT DOCUMENTS**

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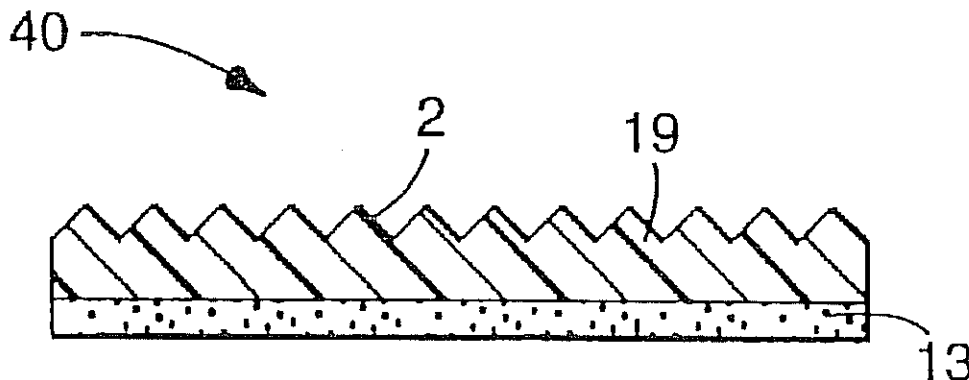
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Primary Examiner—Donald J. Loney*Attorney, Agent, or Firm*—Gary L. Griswold; Walter N.
Kim; Carolyn V. Peters[57] **ABSTRACT**

A repositionable article having a microstructured surface is described which includes a removable and rebondable adhesive layer having first and second surfaces and a control layer having a control surface and a back surface, the second surface of the adhesive layer adhered to the back surface of the control layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions. The articles find use particularly as mouse pads.

48 Claims, 4 Drawing Sheets

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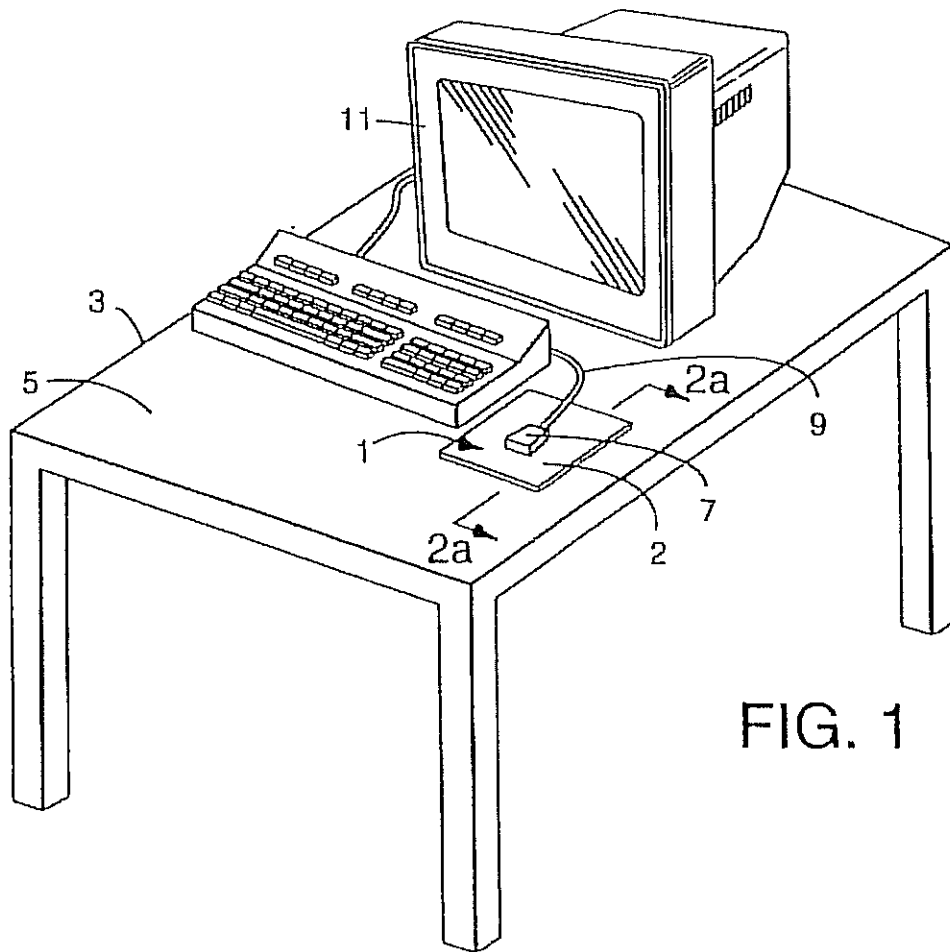


FIG. 1

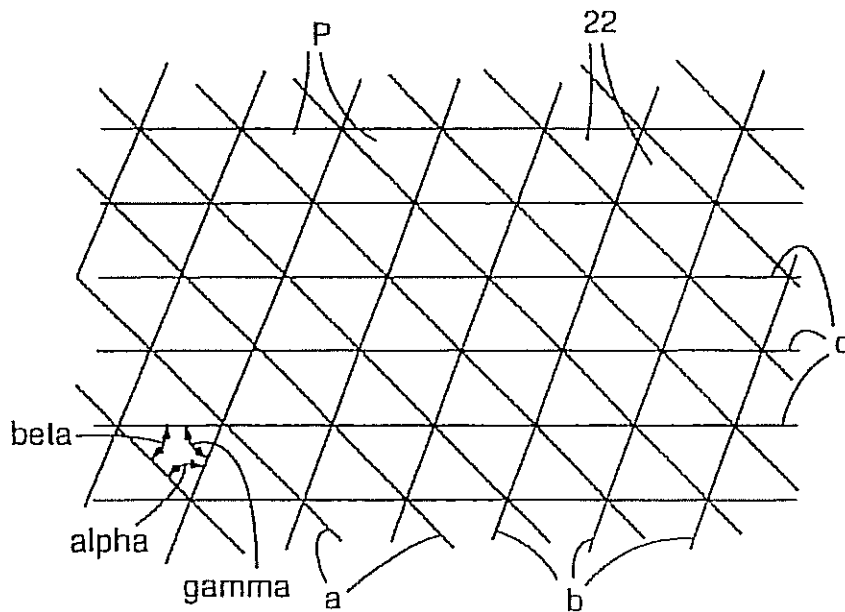


FIG. 1a

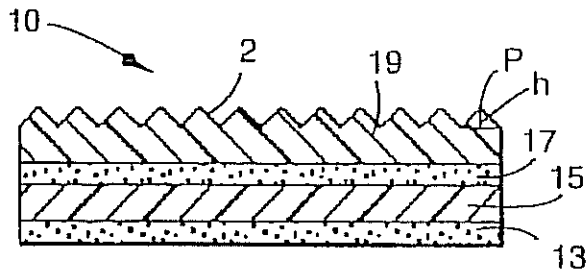


FIG. 2a

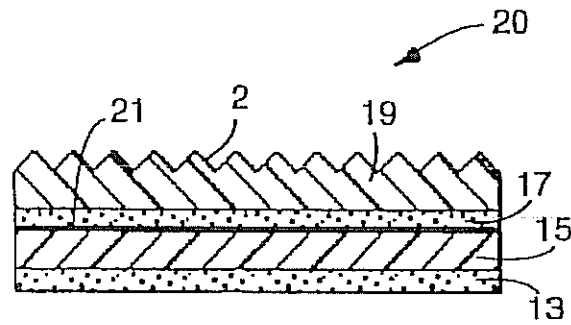


FIG. 2b

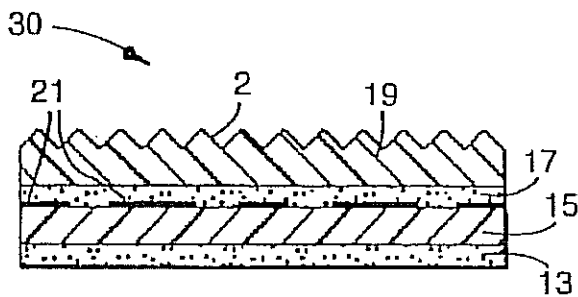


FIG. 2c

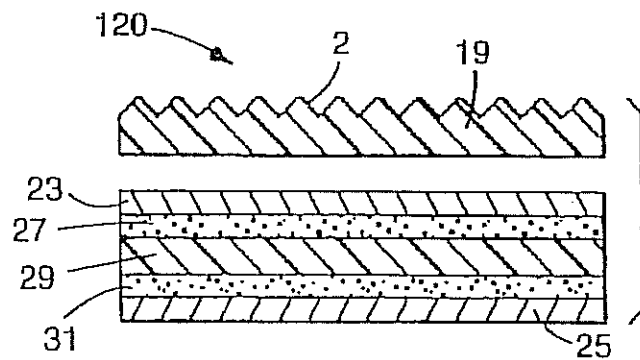


FIG. 8

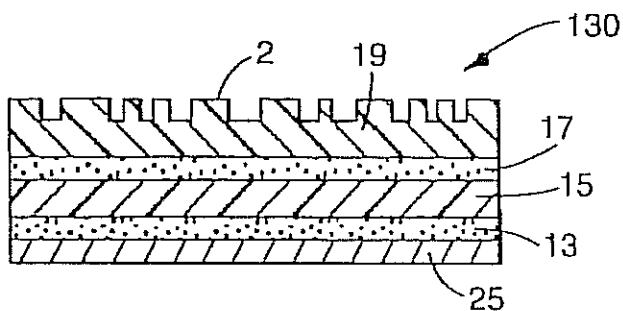


FIG. 9

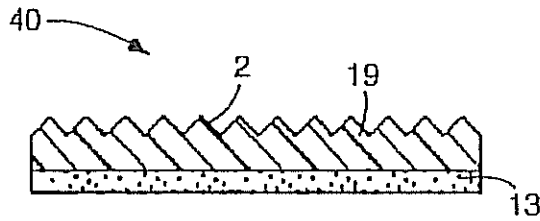


FIG. 2d

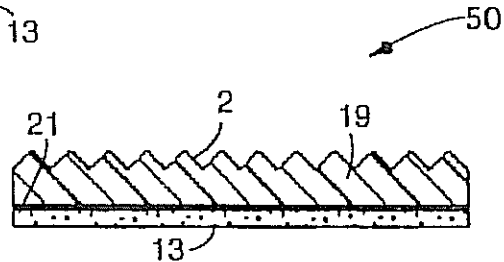


FIG. 2e

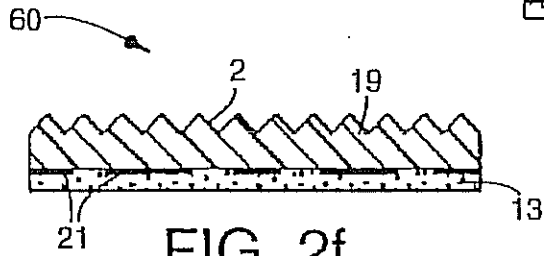


FIG. 2f

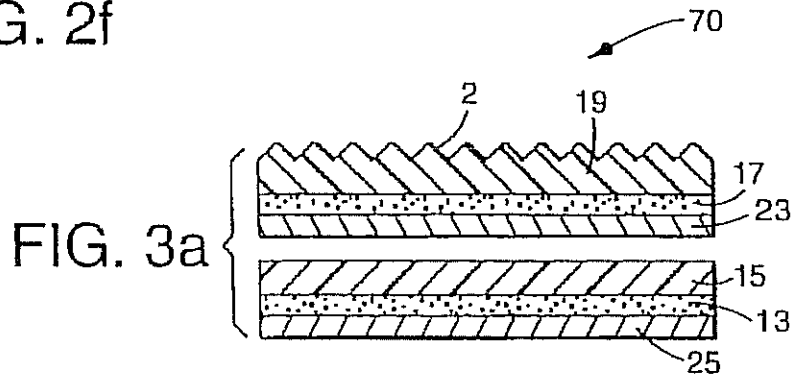


FIG. 3a

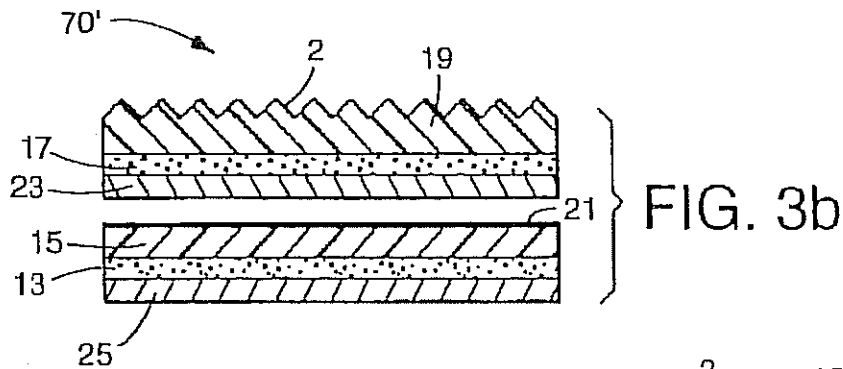


FIG. 3b

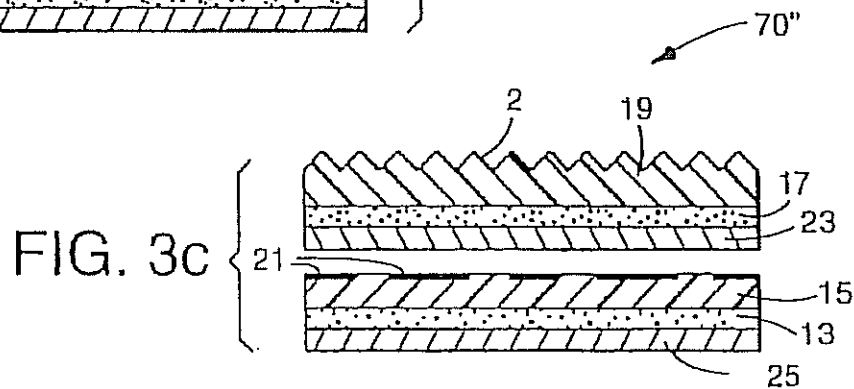
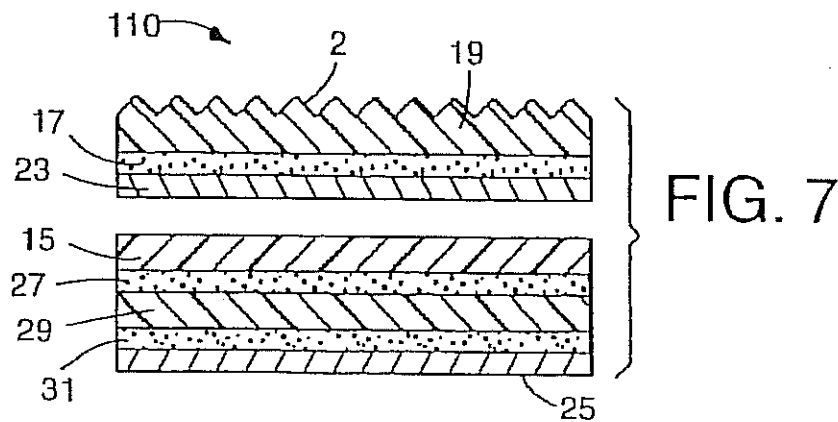
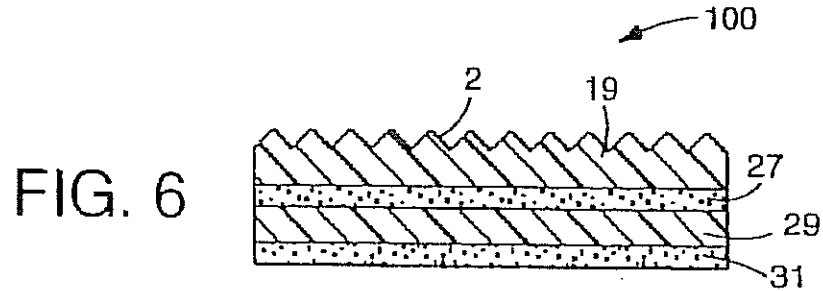
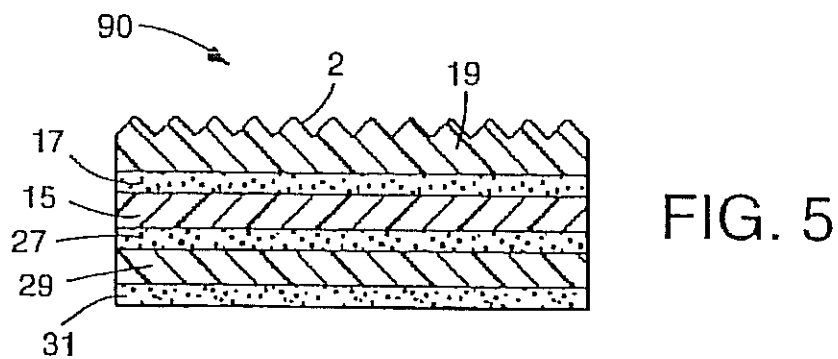
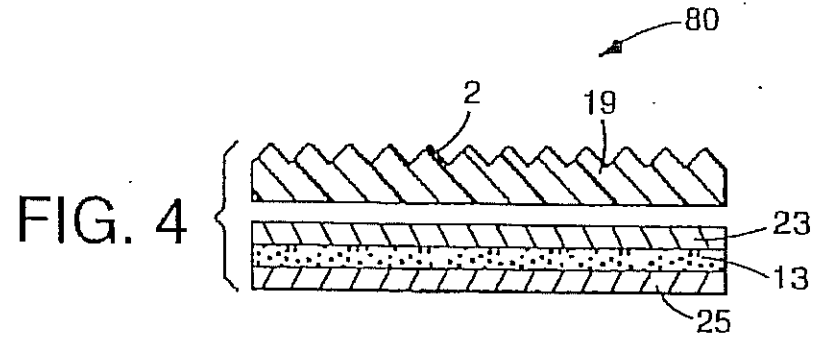


FIG. 3c



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REPOSITIONABLE ARTICLES HAVING A MICROSTRUCTURED SURFACE, KITS FOR PRODUCING SAME, AND METHODS OF USE

CROSS-REFERENCE TO RELATED APPLICATIONS

This application is a continuation-in-part of application Ser. No. 07/929,685, filed Aug. 13, 1992, which was a continuation-in-part of application Ser. No. 07/751,147, filed Aug. 28, 1991, now U.S. Pat. No. 5,234,740.

BACKGROUND OF THE INVENTION

1. Field of Invention

The present invention relates to printable, removable adhesive-fastened articles having a microstructured surface on their nonadhesive side, which are useful as a pad over which hand-held pointing devices may traverse.

2. Background Art

Many computers for use in the home or office are equipped with a hand-held pointing device, commonly referred to as a "mouse" because of their appearance. The mouse controls a pointer or cursor on the computer screen. A typical mouse has a rubber or rubber-coated "track ball" which contacts a surface, such as a desk top. Smooth and textured metallic track balls are also known. The track ball rolls within a socket within the mouse body. The mouse translates the movement of the track ball, in cooperation with the necessary computer hardware and software, into signals that tell the computer how to move the pointer.

Mice of the type previously described are generally referred to as mechanical mice. Other types of mice convert the movement of the track ball to an optical signal which is then converted into corresponding electrical signal (optomechanical mice).

A mouse will typically have one or more mouse buttons accessible to the user which the user may depress. In some cases, mouse buttons may be depressed simultaneously with the movement of the mouse across the surface, a procedure commonly known as "dragging." Dragging lets the user select a portion of the screen or move objects around the screen. In some mice of the type described, moving the mouse slowly results in small movements of the pointer, while moving the mouse faster results larger pointer movements.

In all of the above-mentioned mouse movements, both the mouse-to-pointer movement relationship and comfort are important to the user. It is frequently desired to cover large distances on the screen with minimum mouse movement, while retaining precise pointer control when the pointer approaches the desired object. It is also preferable to move the mouse with as much comfort to the user's hand and wrist as possible, avoiding step-like movements as might accompany the hand traversing a raised edge of the desk, or jerky movements across the desk made possible by dust, dirt, oil or food particles on the desk.

It is common for human users of interactive computers employing a mouse, particularly in office and home settings, to place the computer on decorative wooden or other furniture which may be subject to scratches and dents by mouse movements. If the furniture is wood, oils or other slippery materials may be present in furniture polish. These materials, food grease and food particles, dust, dirt, and the like, may accumulate on such surfaces and come between the

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mouse and the surface thus rendering the mouse movement on the pad, and the cursor movement, less effective than desired. As such, most users would rather not have the mouse traverse the surface of the desk per se, but commonly employ a "mouse pad" to both protect the surface and retain precision pointer movements. One popular mouse pad comprises a thin woven or nonwoven surface over which the mouse traverses, and the nonwoven or woven material may have logos, advertisements, or other graphic symbols printed thereon. Adhered to one side of the woven or nonwoven material opposite the side the mouse traverses is typically a flexible foam which is perhaps 0.125 to 0.5 inch (0.32 to 1.27 cm) thick. This foam backing may have a plurality of rubbery, knobby protuberances on its bottom surface (away from the mouse traversing surface) which provide frictional non-slip contact with the desk or other surface.

Home and office computer users also frequently desire to personalize their work stations. Mouse pads are available having means for changing graphic designs within an envelope created between the mouse-traversing surface layer of the pad and a base layer. The base layer is typically an open cell neoprene sponge rubber or other resilient layer to isolate the mouse traversing surface of the pad from unevenness in the desk upon which the mouse pad is placed. Unfortunately, the foam pads tend to present an uncomfortable step which the user's hand must traverse, at times presenting the user's wrist with an uncomfortable movement. Mouse pads of this type thus sacrifice some user comfort for precision in locating the cursor on the computer screen.

It would be an advancement in the mouse pad art to provide a pad which is more comfortable to the user than those having a thick backing, and which may be changeably customized or personalized to alternatively display family photos, important computer commands, cartoons, and the like on the pad. It would also be advantageous if the pad could easily be temporarily immobilized on the desk or other surface, then removed and moved to another surface, without damage to the surface and without leaving a residue on the surface. It also would be desirable to have a mouse pad having a uniform texture with good aggressive grab to the track ball providing a smooth, uniform, and predictable movement to the pointer on the screen, but not abrasive to the user's hand, while being possible of manufacture from almost any plastic material such as urethane or polyethylene.

SUMMARY OF INVENTION

In accordance with the present invention, repositionable articles having a microstructured surface are presented which are useful as a repositionable control surface for a personal computer pointing device (including a mouse or data pen). The articles of the invention may also serve as repositionable drink coasters and airline tray covers. The inventive articles can be adhered either permanently or temporarily to a surface, and can be repeatedly attached and removed from a surface. The articles may be customized with artwork, either by printing on the obverse or through a lamination process.

The articles of the invention have a control surface which is soft to the human touch, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions. The raised regions are preferably pyramidal. The phrase "an array of a plurality of precisely shaped raised regions and a plurality of recessed regions" is meant to distinguish over articles, such as paper, which have a smooth surface but microscopically have a textured surface.

Articles of the invention are especially useful as repositionable mouse pads due to excellent mouse tracking ball contact with the control surface. As the control layer may be formulated to contain water and oil repellent and soil resistant additives (or the control surface coated with same), the control surface will not get dirty from finger tip oils. The control layer is non-porous, will not shed lint and can be cleaned easily. Do to these properties, the articles of the invention advantageously keep the track ball cleaner for extended time periods.

In one embodiment the repositionable article having a microstructured surface comprises:

- a) a removable and rebondable adhesive layer having first and second surfaces;
- b) a control layer having a control surface and a back surface, the second surface of the adhesive layer adhered to the back surface of the control layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions.

Preferred articles of the invention are those wherein the removable and rebondable adhesive layer comprises an adhesive which is permanently bonded to the back surface of the control layer but remains rebondable to a surface such as a desk top and the like. Also preferred are control layers which are modified to include optional antistatic agents, water, oil and soil resistant additives and/or coatings, pigments and/or dyes, and the like, and those control layers which have printed information on the obverse. Optionally, the control surface may have these types of additives applied by the user as coatings from spray containers, as is commonly known.

As used herein the terms "removable and rebondable" and "repositionable", when referring to an adhesive layer, are interchangeable terms, and mean that the adhesive permits repeated cycles in which materials are alternatively bonded thereto and removed therefrom, while the adhesive is permanently retained on the back surface of the control layer. One suitable repositionable adhesive is the adhesive system described in the portion of assignee's U.S. Pat. No. 3,857, 731 extending from column 2, line 1 through column 10, line 47, which portion is incorporated by reference herein. This adhesive system comprises a binder material having embedded therein and protruding from the exposed surface thereof, elastomeric, inherently tacky, acrylate copolymer microspheres. This adhesive system is further described herein. Adhesives exhibiting a peel adhesion ranging from about 2 to about 25 ounces per inch of width (about 22 to about 275 grams per cm of width) in a standard peel adhesion test are preferred.

In a second embodiment the repositionable article having a microstructured surface comprises:

- a) a removable and rebondable first adhesive layer having first and second surfaces;
- b) a substrate layer having first and second surfaces, the second surface of the first adhesive layer adhered to the first surface of the substrate layer;
- c) a second adhesive layer having first and second surfaces, the first surface of the second adhesive layer adhered to the second surface of the substrate layer; and
- d) a control layer having a control surface and a back surface, the back surface adhered to the second surface of the second adhesive layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions.

Preferred are those articles of the second embodiment in which the substrate layer is selected from the group con-

sisting of plastic and paper, and the second adhesive layer is a permanent adhesive. The substrate layer may also be a foamed material, such as foamed neoprene, but this is not particularly preferred. The control surface preferably consists of a uniform array of a plurality of pyramids each having a height ranging from about 0.001 inch to about 0.040 inch (about 2.54×10^{-3} to about 0.1 cm). A graphic design may be adhered between the substrate layer and the second adhesive, or the design may be printed on the back surface of the control layer.

The articles of the first and second embodiments optionally include a release liner material removably attached to the rebondable adhesive.

Another embodiment of the invention is a kit adapted to be manipulated by the user to form a repositionable article having a microstructured surface. A first kit embodiment comprises:

- a) a first sheet member consisting of:
 - 1) a first release liner material having first and second surfaces;
 - 2) a first adhesive layer having first and second surfaces, the second surface of the first adhesive layer removably adhered to the first surface of the first release liner material; and
 - 3) a control layer having a control surface and a back surface, the back surface of the control layer adhered permanently to the first surface of the first adhesive layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions; and
- b) a second sheet material consisting of:
 - 1) a second release liner material having first and second surfaces;
 - 2) a removable and rebondable second adhesive layer having first and second surfaces, the second surface of the second adhesive layer adhered to the first surface of the second release liner material; and
 - 3) a substrate layer having first and second surfaces, the second surface of the substrate layer adhered to the first surface of the second adhesive layer, and the first surface of the substrate layer adapted to be permanently adhered to the first surface of the first adhesive layer when the first release material is removed from the first adhesive layer and the first adhesive layer and substrate layer are joined.

Preferred are those kits comprising a graphic layer, the graphic layer positioned either between the first adhesive layer and the control layer (or printed on the back surface of the control layer), or adhered to the second surface of the substrate layer.

Another kit embodiment, adapted to be manipulated by the user into a repositionable article having microstructured surface, comprises:

- a) a first sheet material having a control surface and a back surface, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions; and
- b) a second sheet material comprising:
 - 1) a first release material having first and second surfaces;
 - 2) a removable and rebondable adhesive layer adapted to be attached to the back surface of the control layer, the adhesive layer having first and second surfaces, the second surface of the adhesive layer removably adhered to the first surface of the first release material; and
 - 3) a second release material having first and second surfaces, the second surface of the second release

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material removably adhered to the first surface of the adhesive layer.

Yet another embodiment of the invention is a repositionable article having a microstructured surface comprising:

- a) a removable and rebondable first adhesive layer having first and second surfaces;
- b) a first substrate material having first and second surfaces, the second surface of the first substrate material adhered to the first surface of the first adhesive layer;
- c) a second adhesive layer having first and second surfaces, the second surface of the second adhesive layer adhered to the first surface of the first substrate layer;
- d) a second substrate layer having first and second surfaces, the second surface of the second substrate layer adhered to the first surface of the second adhesive layer;
- e) a third adhesive layer having first and second surfaces, the second surface of the third adhesive layer adhered to the first surface of the second substrate material; and
- f) a control layer having a control surface and back surface, the back surface of the control layer adhered to the first surface of the third adhesive layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions.

Preferred are those articles within this embodiment wherein a graphics layer is positioned between the second substrate layer and the third adhesive layer.

Still another embodiment of the invention is a repositionable article having a microstructured surface comprising:

- a) a removable and rebondable first adhesive layer having first and second surfaces;
- b) a substrate layer having first and second surfaces, the second surface of the substrate layer adhered to the first surface of the first adhesive layer;
- c) a second adhesive layer having first and second surfaces, the second surface of the second adhesive layer adhered to the first surface of the substrate layer;
- d) a control layer having a control surface and a back surface, the back surface of the control layer adhered to the first surface of the second adhesive layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions.

Another kit of the invention includes first and second sheet-like articles, the kit comprising:

- a) the first sheet-like article consisting of:
 - 1) a first release material having first and second surfaces;
 - 2) a first adhesive layer having first and second surfaces, the second surface of the first adhesive layer removably adhered to the first surface of the first release layer; and
 - 3) a control layer having a control surface and a back surface, the back surface adhered to the first surface of the first adhesive layer, the control layer defined as above; and
- b) said second sheet-like article consisting of:
 - 1) a second release material having first and second surfaces;
 - 2) a removable and rebondable second adhesive layer having first and second surfaces, the second surface of the second adhesive layer removably adhered to the first surface of the second release material;
 - 3) a first substrate layer having first and second surfaces, the second surface of the first substrate layer

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adhered to the first surface of the second adhesive layer;

- 4) a third adhesive layer having first and second surfaces, the second surface of a third adhesive layer adhered to the first surface of the first substrate layer; and
- 5) a second substrate layer having first and second surfaces, the second surface of the second substrate layer adhered to the first surface of the third adhesive layer.

An alternative kit including first and second sheet-like articles comprises:

- a) a first sheet-like article consisting of a control layer having a control surface and a back surface, the back surface adapted to be contacted with a second sheet-like article, the control surface defined as above; and
- b) a second sheet-like material consisting of:
 - 1) a first release material having first and second surfaces;
 - 2) a removable and rebondable first adhesive layer having first and second surfaces, the second surface of the first adhesive layer removably adhered to the first surface of the first release material;
 - 3) a substrate layer having first and second surfaces, the second surface of the substrate layer adhered to the first surface of the first adhesive layer;
 - 4) a second adhesive layer having first and second surfaces, the second surface of the second adhesive layer adhered to the first surface of the substrate layer; and
 - 5) a second release material having first and second surfaces, the second surface of the second release material removably adhered to the first surface of the second adhesive layer, the second release material and the first release material adapted to be removed from the second sheet-like article, and the first surface of the second adhesive layer adapted to be adhered to the second surface of the control layer.

The articles of the invention may be:

- (a) packaged flat with overlapping articles, wherein the adhesive is covered with a release liner;
- (b) packaged flat with overlapping articles, adhesive unlinered;
- (c) rolled onto itself such that the adhesive is not exposed but is covered up by subsequent layers.
- (d) folded onto itself, adhesive against adhesive, such that the rebondable adhesive remains clean until used.

Thus, the invention further includes a support article from which repositionable articles can be removed, the support article comprising a plurality of repositionable articles each having a microstructured surface, each repositionable article comprising:

- a) a removable and rebondable adhesive layer having first and second surfaces;
- b) a control layer having a control surface and a back surface, the back surface of the adhesive layer adhered to the back surface of the control layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions,

the repositionable articles being relatively disposed so that at least a portion of the control surface contacts at least a portion of the first surface of the adhesive layer of an underlying repositionable article. Preferred support articles are those wherein the repositionable articles are disposed in the form of a stack or roll of repositionable articles, and

support articles upon which are mounted one or more of the repositionable articles.

A final embodiment comprises a repositionable article having a microstructured surface comprising:

- a) a non-adhesive, high friction layer having first and second surfaces;
- b) a control layer having a control surface and a back surface, the second surface of the non-adhesive, high friction layer adhered to the back surface of the control layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions.

It will be understood that the repositionable adhesive in all other embodiments may be substituted with the non-adhesive, high friction materials.

There are many advantages of the articles and kits of the present invention when used as mouse pads when compared with the conventional foam-backed mouse pads. Preferably, the articles of the invention are constructed such that the total thickness (i.e. the thickness measured from the desk or table surface to the point of the article most distal from the desk surface) is less than $\frac{1}{4}$ inch (6.35 mm), preferably less than $\frac{1}{16}$ inch (about 1.6 mm), but in all cases more than 0.05 mm. In survey tests of users comparing the inventive articles with those of the type having $\frac{1}{4}$ inch or greater thick foam backing, it was found that thicknesses within these ranges endow the inventive articles with significant ergonomic advantage. The inventive article's low height (i.e. low thickness value) still allows the area of the desk or other surface covered by the article (sometimes referred to as the "mouse area") to be used as a normal desk surface. Papers can easily be slid over it, as can a keyboard. The control layer film is preferably transparent. Graphic artwork can be laminated to the obverse yet remain clear and legible, and the size and shape of the inventive articles can be easily customized using scissors.

The inventive articles are of suitable flexibility such that they will lay flat on a surface even after being flexed. The inventive articles are preferably sufficiently resilient so that the article bends as it is peeled off a desk or other surface, but which is supple so that the article flattens out easily upon reattaching to the desk. Typically, articles of the invention are sufficiently flexible to be wound about themselves on a 1 inch (2.54 cm) diameter mandrel.

The control surface may have a border or other defined portion which is not microstructured. For example, the peripheral border of the control surface may be stippled such that it is similar to the surface obtained by plasma coating. Alternatively, a portion or all of the control surface may be created through a knurling process yielding less uniform results.

The control layer of the articles of the invention has a control surface defined by an array of precisely shaped protrusions, preferably pyramids or pyramidal frustums, that are specially configured to provide desired traction control properties. Although uniform, nonrandom arrays are preferred in some instances, random arrays may be preferred in other end uses.

Adapted to be repositionably secured to the surface of a desk or other apparatus, the articles of the invention comprise at least one of (1) a repositionable adhesive layer on the surface of the article proximal to the desk surface, or (2) a high-friction surface which replaces the repositionable adhesive, such as a coating of rubber (neoprene, chloroprene, and the like), or (3) the control layer can be adhered to a desk or other surface through the use of surface tension effects, through a vacuum formed by air exclusion or through a

highly plasticized control layer or substrate layer that "wets out" the desk surface, in much the same fashion as non-adhesive vinyl decals are adhered to a surface. Useful highly plasticized, non-adhesive layers may comprise a plasticized rubber such as neoprene. It is most preferred to utilize a repositionable adhesive, such as that known under the trade designation "Post-It", which is described in the previously mentioned '731 patent.

Alternatively, the control layer may have applied on its back surface a "slidable" pressure-sensitive adhesive such as those described in U.S. Pat. No. 5,141,790, incorporated by reference herein. This allows the inventive articles to be moved into place and then adhered by hand pressure. The adhesives described in the '790 patent comprise a plurality of spaced clumps of particles substantially uniformly distributed over and protruding from one face of the pressure-sensitive adhesive layer, the tips of the clumps of particles being substantially free from the pressure-sensitive adhesive. Preferably, the individual particles are smaller than the thickness of the pressure-sensitive adhesive layer, and substantially every clump extends to a height above the surface of the pressure sensitive adhesive layer that exceeds the average size of the particles. The particles are preferably microspheres of adhesive such as those described in U.S. Pat. No. 3,691,140, further described herein below.

The control surface of the invention may be tailored (by proper combination of microstructure, composition and transparency) so that the array of precisely shaped protrusions and recesses defining the control surface creates an optical effect, such as Moire patterning or "image shifting." That is, the image changes with viewing angle.

In another of its embodiments, the invention relates to an article comprising a control layer having a control surface and a back surface, the control surface comprising an array of precisely shaped protrusions in the form of posts having bases in the plane of the control layer. In one embodiment the posts have non-planar sides which taper radially inwardly from their bases to their tops, the posts preferably comprising cones or conical frustums which have substantially circular bases. In another embodiment, the posts are essentially right cylinders of constant diameter from their base to their tops. This latter arrangement produces a matte surface texture comprised of a great number of plateau-like protrusions scattered at random on the surface and each having a top at the same level.

BRIEF DESCRIPTION OF THE DRAWING

FIG. 1 is a perspective schematic view of a computer work station including a mouse and mouse pad;

FIG. 1a is a plan view of a portion of the control surface of an illustrative mouse pad of the invention;

FIGS. 2a-2f are cross-section views taken along the section 2a-2a as shown in FIG. 1;

FIGS. 3a-3c are cross-section views of kit embodiments of the articles of the invention;

FIG. 4 is a cross-section view of another kit embodiment of the invention;

FIGS. 5 and 6 illustrate in cross-section other alternatives to the embodiment shown in FIG. 2d;

FIG. 7 illustrates an embodiment which is an alternative to the embodiment illustrated in FIG. 3a;

FIG. 8 is a cross-section of an alternative to the embodiment illustrated in FIG. 4; and

FIG. 9 is a cross-section of an alternative embodiment showing a different microstructured surface.

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DESCRIPTION OF PREFERRED EMBODIMENTS

FIG. 1 illustrates in perspective schematic a mouse pad 1 having a control surface 2, mouse pad 1 lying essentially horizontally on a table or desk 3 having a top surface 5. A mouse 7 is shown resting on control surface 2, mouse 7 having wire 9 connecting it to a computer 11.

FIG. 1a is an illustrative embodiment of a preferred control surface 2 of the mouse pad of the invention. A pattern of three intersecting sets of parallel v-shaped grooves yields the structured control surface 2. The apexes of each set of grooves are identified as a, b, and c. The base of each individual protrusion 22 is defined by one groove of each of the three sets. As mentioned above, the three sides of the base of each three-sided pyramid are typically relatively equal in length. This can be controlled by selection of the intersection angles between the three sets of grooves, i.e., alpha, beta, and gamma. Each side of the base of a pyramidal protrusion and the peak of that protrusion defines a plane, referred to herein as a face of the protrusion. The faces of each protrusion are preferably relatively equal in area.

The direction parallel to each set of grooves is referred to herein as a major axis of the control surface. Thus, the article illustrated in FIG. 1a has three major axes. The maximum grip or friction provided by control surfaces of this type is obtained in a direction perpendicular to one of the major axes of the control surface. In some instances, articles of the invention are characterized as having directional gripping characteristics.

In a second embodiment of the invention (not illustrated), the protrusions comprise posts having non-planar sides and bases on the control layer. The posts taper radially inwardly from their bases to their tops. Preferably, the posts comprise substantially circular bases and the posts are either cones or conical frustums. Most preferably, land areas separate adjacent ones of the bases of the posts.

With respect to articles of the invention in general, if the protrusions comprise pyramidal or conical frustums, each frustum typically has a planar top or upper surface which is parallel to its base, although it is contemplated that the planar top or upper surface of the frustum can be inclined at an angle relative to the frustum's base. Further, the tops or upper surfaces of the frustums are not necessarily planar.

If the control surface of an article of the invention is defined by pyramids or cones, it is typically preferred, but not essential, that the peak of the pyramid or cone be centered over the geometric center of the base of the pyramid or cone. If the control surface of the article is defined by pyramidal or conical frustums, it is preferred, but not essential, that the planar tops of the frustums have geometric centers which are centered over the geometric centers of their respective bases. In some instances, if the protrusions of a control layer have peaks or planar tops which are "horizontally offset" from their respective bases, the sheeting may have directional gripping characteristics as a result. Articles having directional gripping characteristics would likely be considered desirable in many envisioned applications.

With respect to any embodiment of the invention, the protrusions are typically between about 3 mils and about 21 mils (75 and 525 micrometers), preferably between about 5 mils and 9 mils (125 and 225 micrometers), and most preferably about 7 mils (175 micrometers), in height. In some embodiments, the control layer can comprise protrusions up to about 30 mils (750 micrometers) in height, although such control layers may tend to be abrasive to one's

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skin. As used herein and illustrated in FIG. 2a, the height h of a protrusion refers to the length of the shortest possible line segment extending from the protrusion's peak P to its base. The protrusion's peak is defined to be the highest point of the protrusion, i.e., the point of the protrusion located furthest from the plane in which the base of the protrusion lies.

The shape of a protrusion is characterized by its aspect ratio, which is defined as the ratio of the protrusion's height h to its equivalent base diameter D_{eq} . Where the base of the protrusion is a circle, the equivalent base diameter D_{eq} is simply the diameter of the circle. Where the base of the protrusion is not a circle, the equivalent base diameter D_{eq} is defined as the diameter of a hypothetical circle having the same area as the base. It is believed that the invention can be practiced satisfactorily if the protrusions have an aspect ratio which is from about 0.1 to about 5. Most preferably, the aspect ratio for pyramidal protrusions is from about 0.3 to about 0.6, and the aspect ratio for protrusions which are tapered posts is about 2.

Referring to FIG. 2d, layers 15 and 19 typically comprises a polymeric film selected from, for example, the group consisting of polyvinyls, polyurethanes, polyesters, e.g., polyethylene terephthalate, polyacrylics, polycarbonates, polyolefins, and mixtures thereof. Polyurethanes are presently preferred because they typically yield control surfaces which offer an optimum combination of high toughness and durability coupled with high softness and flexibility. Polyacrylics typically yield articles that are relatively rigid.

Control layer 19, excluding the height of the protrusions, is typically between about 2 mils and about 100 mils (50 and 2,500 micrometers) thick, and most preferably between about 4 mils and about 20 mils (100 and 500 micrometers) thick.

FIGS. 2a-2f illustrates article embodiments 10, 20, 30, 40, 50 and 60, respectively, in cross-section along the line 2a-2a of FIG. 1. Embodiment 10 (FIG. 2a) comprises a removable and reboundable adhesive layer 13 to which at least one major surface is adhered to a plastic layer 15, which in turn has another adhesive layer 17 adhered over the plastic layer 15.

A suitable removable and reboundable adhesive is available from Minnesota Mining and Manufacturing Company, St. Paul, Minn. ("3M") under the trade designation "Post-It", which comprises inherently tacky elastomeric acrylate copolymer microspheres as disclosed in claimed in commonly assigned U.S. Pat. Nos. 3,691,140, and 3,857,731, both incorporated herein by reference. The '140 patent teaches that the copolymer microspheres disperse in various solvents to form suspensions which can be utilized in aerosol spray applications. When a substrate is sprayed on such suspensions and the solvent thereafter evaporated, there results a continuous coating of mildly tacky pressure-sensitive adhesive. Paper and the like can be applied to the surface of the coating, removed, repositioned, and rebounded. It had been found, however, that during removal of an adhered object, some of the particular adhesive spheres would transfer to the surface of the object, reducing the number of spheres on the originally coated substrate. Therefore, a substrate having the adhesive sprayed thereon would soon lose its tacky nature, and after repeated applications and removals, subsequent objects would eventually not adhere thereto. The invention of the '731 patent solved this problem by providing individual sockets on a substrate surface with a microspherical adhesive to be retained in, thereby reducing or eliminating transfer of the microspheri-

cal adhesive upon removal of an object adhered thereto. The individual sockets are conveniently provided by a binder material bonded to the substrate surface.

In accordance with the present invention, adhesive layer 13 preferably comprises a binder material having embedded therein and protruding from the exposed surface thereof, elastomeric, inherently tacky, acrylate copolymer microspheres of the type disclosed and claimed in the '140 patent. These microspheres consist essentially of about 90 to 99.5 percent by weight of at least one acyl acrylate ester and about 10 to about 0.5 weight percent of at least one monomer selected from the group consisting of substantially oil-insoluble, water-soluble, ionic monomers and maleic anhydride. The normally tacky and elastomeric copolymer spheres are small in size, having diameters in the range of about 1 to 250 micrometers, with the majority of the spheres falling in the range of about 5 to about 150 micrometers.

The binder compound utilized to anchor the spheres to prevent the removal from the adhesive surface should be compatible with the microspheres and the table or desktop 5 illustrated in FIG. 1, i.e., it should neither chemically attack the polymer spheres or tabletop 5 nor act as a solvent for them. In other words, the anchoring binder should be inert toward the microspheres and the surface to which the article of the invention is applied. The film-forming resins having a high degree of adhesion for the acrylate copolymer spheres generally are effective to anchor the spheres to a substrate. Relatively hard resins such as epoxies and nitrocellulose and relatively soft resins such as acrylates and vinyl ethers are examples of suitable film-forming anchoring binder resins.

As explained in the '731 patent, where necessary, conventional primers can be conveniently utilized between adhesive layer 13 and plastic layer 15. The art of priming substrates to allow wetting or bonding of a variety of coatings is well known, such as disclosed in U.S. Pat. Nos. 2,328,066 and 2,926,105, which disclose primers for cellophane plastic materials, U.S. Pat. No. 2,927,868, which discloses primers for acetate films, and U.S. Pat. No. 2,897,960 which discloses primers for polyvinylchloride films, all of which are incorporated by reference herein.

Application of adhesive layer 13 to plastic layer 15 can be undertaken in any conventional manner. For example, the mixture may be coated to a desired thickness, using, for example, a knife, a wire-wound bar or a rotogravure roll. Alternatively, the mixture may be sprayed onto the plastic 15.

Although all the embodiments shown in FIGS. 2a-2f, illustrate adhesive layer 13 across the entire surface of plastic 15, it will be appreciated that one advantage of the articles of the invention is that the articles may be made with adhesive 13 present only around the perimeter of the article. This would allow the placement of photographs or other preprinted sheets to be placed under the control layer 19.

Of course it is within the invention that the articles of the invention may be adhered "permanently" to desk or tabletop 5. In these embodiments, adhesive 13 may be any of those commercially available adhesives described in assignees pending patent application Ser. No. 07/929,685, which was cross-referenced above. Suitable permanent adhesives are also discussed below.

Plastic sheet 15 as shown in FIGS. 2a-2c, as well as in FIGS. 3a-3c, 5, 7, and 9, may actually be plastic or paper. When layer 15 is paper, layers 13 and 15 may comprise a single product such as that known under the trade designation "3M Laser Label" sheets, number 7701, which are available in 8.5 by 11 inch sheets suitable for use with a

personal computer printer such as the printers known under the trade designations "HP Deskjet 500C" and "HP LaserJet IIIp", both available from Hewlett Packard Corporation, Palo Alto, Calif. Laser label sheets having a model number 7701 comprise a cellulose paper layer 15 having an adhesive layer 13 thereon, the adhesive layer 13 in turn having a release liner 25 (FIGS. 3 and 4). The advantage of these such laser label sheets will become apparent with a description of the embodiments in FIGS. 3 and 4.

Referring again to embodiment 10 illustrated in FIG. 2a, adhesive layer 17 is a permanent adhesive, such as those described above applicable for use for adhesive layer 13. Adhesive for use in adhesive layer 17 should be inert to layer 15 and layer 19, i.e., adhesive 17 should not chemically attack the materials of layers 15 and 19.

Control layer 19 as illustrated in FIGS. 2a-2f has a control surface 2 which is a microstructured surface consisting of tiny pyramids [approx. 0.01 to 0.014 inches (about 2.54×10^{-3} to about 3.56×10^{-2} cm) in height]. This microstructured surface gives a precise functional control surface 2 which is uniform in texture which affords good aggressive grab to a mouse tracking ball, but which is preferably not abrasive to the user's hand. A control surface preferably provides a smooth uniform and predictable movement to the pointer or cursor on the computer screen. The plastic material which comprises control layer 19 is preferably transparent and colorless allowing any printing which appears on plastic surface 15 (such as represented by ink layer 21 and FIGS. 2b and 2c) to be seen. Alternatively, pigments and/or dyes may be incorporated into control layer 19 to create a marbled appearance, or a colored opaque appearance.

Ink 21 is preferably any ink or pigment which may printed by typical personal computer printers, and which will adhere to paper or film layer 15. As illustrated in FIGS. 2b and 2c, ink layer 21 may either be positioned at the entire cross-section of the article as illustrated in FIG. 2b, or there may be areas devoid of ink such as illustrated in FIG. 2c, as when words or other characters are printed on layer 15.

FIGS. 2d-2f illustrate alternative embodiments 40, 50, and 60 to those illustrated in 2a-2c, respectively. Embodiment 40 illustrated in FIG. 2d consists simply of adhesive 13 (preferably removable and rebondable) adhered to bottom surface of control layer 19. FIGS. 2e and 2f illustrate embodiments similar to that illustrated in FIG. 2d, with the inclusion of ink layer 21 printed or adhered to the noncontrol surface, as explained previously.

FIGS. 3 and 4 illustrate kit embodiments of the present invention. For example, embodiment 70 is represented by two sheet-like materials, the first sheet-like material comprised of an adhesive layer 17 having a release liner 23 attached thereto, the adhesive in turn attached to control layer 19. A second sheet-like material of the kit of FIG. 3a comprises an adhesive layer 13 (preferably a rebondable adhesive) having a release liner 25, the adhesive layer 13 to attached to paper or plastic film layer 15. In embodiment 70 of FIG. 3a, the sheet-like portion consisting of layers 13, 15 and 25 is available under the trade designation "3M Laser Label" sheets, model no. 7701, which are the 8.5 by 11 inch sheets previously mentioned. Adhesive layer 17 is typically and preferably a permanent adhesive known under the trade designation "3M Adhesive Transfer Tape 950" from 3M, which is an acrylate-based permanent adhesive.

Kit embodiments 70' and 70" as shown in FIGS. 3b and 3c, respectively, are similar to kit embodiment 70 of FIG. 3a except for the provision of ink layers 21 as previously mentioned.

The kits of FIGS. 3a-3c are especially useful for users having personal computers and printers. These kits allow the user to print on the surface 15 as shown in FIGS. 3b and 3c by inserting laser label sheets such as those described above into the paper holder of a printer. Essentially any information that can be typed or graphically shown on the computer screen can be printed on the layer 15 such as important, frequently called telephone numbers, advertising logos, designs, and the like.

Referring now to FIG. 4, embodiment 80 illustrated is another two-piece kit. However, the first sheet member of the kit is simply a control layer 19 having a control surface 2, while the second sheet member consists of an adhesive layer 13 (preferably a repositionable adhesive) having on its major surfaces release liners 23 and 25.

Release lining materials can be of any material which does not adhere permanently to the adhesive. Suitable release materials include paper or polyesters which have been treated with a non-adhering substance such as a neat silicone or a fluorocarbon. Alternatively, the release material may be a suspension emulsion, or dispersion of a silicone- or a fluorocarbon-based substance applied directly to the adhesive layer by any method including spraying. Silicone-treated paper is commercially available from James River Corporation (Parchment, Mich.) and a silicone-based emulsion for spray applications is commercially available from Paper-chem Labs (Rockhill, N.C.).

If layer 15 in any embodiment is plastic, suitable materials include those useful in forming the control layer 19, including polyester, polyvinyl chloride, polystyrene, polypropylene, polyethylene, polybutylene, copolymers of polyethylene and vinyl acetate, cellulose di- and triacetate, and ethyl cellulose. One useful polyester film commercially available is that known under the trade designation "Mylar" from E. I. DuPont de Nemours & Company, Wilmington, Del.

As stated previously, it is possible to repositionably adhere the control layer 19 in all embodiments directly onto the desk or other surface by use of a highly plasticized control layer 19. Suitable plasticizers for this purpose include both so-called "internal" and "external" plasticizers, the former meaning a copolymer of a monomer of low T_g , the latter meaning a compound not chemically bound to the polymer. Polyvinyl chloride is a preferred polymer for use in plastic layers since it is compatible with a variety of plasticizers and because the plasticized polymer remains quite stable physically and chemically for long periods of time. Cost, odor and other factors may be important in selecting the plasticizer. Suitable external plasticizers for polyvinyl chloride include triethyl phosphate, dinonyl phthalate, dioctyl sebacate, dioctyl phthalate, and di-2-ethylhexyl phthalate. Dimethyl phthalate is typically used to plasticize cellulose acetate. External plasticizers may be incorporated into the polymer at a weight percentage ranging from 1 to about 50 weight percent.

Referring now to FIGS. 5-8, therein illustrated are constructions 90, 100, 110 and 120, which are alternatives to embodiments of 10, 10, 70, and 80, respectively. In FIGS. 5-8, adhesive layer 13 of embodiments 10, 70 and 80 is replaced by a three layer structure consisting of an adhesive layer 27 which adheres plastic or paper layer 29 to plastic or paper layer 15, and another adhesive layer 31, which as above described may either be a permanent adhesive or a repositionable adhesive, preferably the latter.

Illustrated in FIG. 9 is embodiment 130, an alternative of embodiment 10 illustrated in FIG. 2a. Embodiment 130 illustrated in FIG. 9 differs by having a different control

surface 2 formed in the control layer 19. The control surface 2 illustrated in FIG. 9 is commonly referred to as a continuous, uniform random texture, and is described generally in U.S. Pat. No. 4,799,054. The '054 patent describes this surface as a matte surface texture comprised of a great number of plateau-like protrusions scattered at random on the surface and each having a top at the same level. The spaces between the protrusions must be small compared to the surface area of the tracking ball which contacts the control surface 2. A suitable material for use as this surface is a polyvinyl chloride, available from Goss Plastics Film Corporation of Los Angeles, Calif., under the trade designation "Goss 48.4". This product is scratch-resistant and is available in thickness ranging from about 10 to 20 mils (2.54×10^{-2} to 5.08×10^{-2} cm).

Other materials which may be used for control layer 19 include those mentioned in the '054 patent including a textured polycarbonate material available from General Electric Company of Pittsfield, Mass., under the trademark "Lexan", or from any of Mobil Chemical Corporation, Plastics Division, of Pittsburgh, Pa., Rohm and Haas Company of Philadelphia, Pa., and Humko Sheffield Chemical of Memphis, Tenn. Polystyrene, polyester, or acetate films may also be used as well as urethane as previously discussed.

Control layer 19 preferably has hardness ranging from about 70 durometer to about 140 durometer, measured on the Shore "A" durometer scale. Such measurements should be made using an apparatus substantially meeting the American Society for Testing and Materials Standard D 2240-68.

It may also be beneficial to provide the articles of the invention with antistatic properties. A simple wire attachment may be utilized for this purpose. Antistatic agents or conductivity enhancers may be applied to the surface of the finished article or incorporated into the bulk of the plastic polymer (when polymeric layers are employed). The main groups of useful and preferred antistatic agents include ionic compounds, such as quaternary ammonium salts and amines and hydrophilic compounds such as polyglycols and ethylene oxide derivatives. These antistats increase the electrical conductivity of the material by increasing its surface ionic activity. Other useful but less preferred methods may be used, such as incorporation of small amounts of electrically conductive metallic staple fibers, or certain types of carbon black, into the polymer layer(s).

Antistatic agents applied by surface treatment may be applied to plastic polymer layers by dipping, wiping, or spraying a solution or dispersion of the antistat in water or other inexpensive, volatile solvent.

Internal antistatic agents are incorporated into the bulk of the polymer from where it gradually migrates to the surface. Preferred are those internal antistatic agents which are reasonably compatible with the polymer, diffuses through the polymer adequately, and has thermal stability suitable for the end use of the article. The antistatic agent also should not cause undesirable side effects on the article.

The type and amount of internal antistatic agent incorporated into a polymer layer depends greatly on the composition of the polymer. Nonionic ethoxylated compounds are preferred for polyvinyl chloride; N-alkyl diethanolamines are preferred for polyolefins; and quaternary ammonium compounds are preferred for polyurethanes. The amount of internal antistatic agent generally ranges from about 0.05 weight percent to about 5 weight percent, based on total weight of polymer and antistatic agent. A more comprehensive list of both external and internal antistatic agents and there selected use in various polymer systems is available in

Kirk-Othmer, *Encyclopedia of Chemical Technology*, 3rd Edition, Vol. 3, pp. 149-183, John Wiley & Sons (New York, 1978), which is incorporated herein by reference.

The control layer may also have a water and oil repellant and soil resistant coating thereon (or added to the polymer melt composition of the control layer prior to formation of the control layer). Suitable coatings include those commonly employed in fabric and carpet treatment, such as various fluorinated compounds. The fluorinated compounds may be incorporated in most conventional plastics either by copolymerization of reactive fluorinated intermediates or by the inclusion of fluorinated compounds as additives.

Fluorinated intermediates can generally be represented by the formula R_f-X-Y , wherein R_f is a fluoroaliphatic group, X is a divalent linking group, typically a hydrocarbon, between the fluoroaliphatic group and a reactive functional group Y.

Typical examples of reactive intermediates useful in the present invention include alcohols, which can react with isocyanate groups in forming the preferred polyurethane control layers. Useful alcohols include $F(CF_2)_8-CH_2-CH_2OH$ and $F(CF_2)_8-SO_2-NR-CH_2-CH_2OH$, and others disclosed in U.S. Pat. No. 4,264,484 (incorporated by reference herein). Vinyl-functional compounds, such as $F(CF_2)_8-CH_2-CH_2-O-C(O)-CH=CH_2$, may be useful in acrylic films. Other useful functional groups on fluoromonomers include acrylates, epoxides, diols, diamines, diacids, and functional silanes. Other useful fluorinated compositions are the blends disclosed in U.S. Pat. Nos. 4,560,487 and 4,681,790, both of which are incorporated by reference herein. Reactive fluorinated intermediates, when incorporated either as comonomers in polymeric systems or as additives, influence the surface properties of the plastic control surface. A useful range, depending on the particular degree of repellency desired, is from about 5 to 70% by weight of a fluorinated monomer.

Alternatively, partially fluorinated, low molecular weight substances may be included as additives to conventional hydrocarbon polymers during melt extrusion. The fluorinated additives migrate to the surface at rates that depend generally on the melt viscosity of the bulk plastic. As little as 0.01 weight percent of a low molecular weight copolymer of perfluoroalkylethyl methacrylate and acrylamide (85/15) significantly lowers the surface tension of an acrylic polymer film. Similar effects are seen by using perfluorosulfonic acids in polycarbonates, and perfluoroalkylethyl stearates in high density polyethylene. Generally about 0.1 to 1.0% by weight of the fluorinated additive is employed.

Since proper operation of a personal computer mouse relies on the rotational movement of the tracking member maintaining a constant relationship with a linear movement of the mouse itself, it is important that control surface 2 be provided with some texture, as mouse track balls may themselves be provided with smooth surfaces. Selecting a material of proper texture for the control layer 19 can, therefore, usually increase the frictional engagement between the track ball and the control surface 2. Also, the inclusion of a texture on control surface 2 provides even better operation with a mouse having a track ball including a rubber-like outer surface. This frictional engagement facilitates maintaining a 1:1 relationship between the linear mouse movement and track ball rotation.

As alluded to in the discussion of application of graphic symbols to the articles of invention using inks 21 applied to a substrate member (see FIGS. 2b, 2c, 3b and 3c) it is also possible to apply graphic symbols such as by the application

of ink, to the back side of control layer 19 not having the control surface 2, as illustrated in FIGS. 2e and 2f. In all embodiments of the invention, difficulties can thus be avoided that arise as to the information being worn off or interfering with the operation of track ball when the information is printed directly on control surface 2. Ink jet printers can be used to print directly onto the control surface, but this is not preferred.

Control surface 2 is defined by an array (i.e., an orderly arrangement such as a regularly repeating pattern) of precisely shaped protrusions thereon. Protrusions may be discrete elements laminated to control layer 19 or may be integral parts of control layer 19, i.e., control layer 19 may be structured in the form of protrusions 22.

In preferred embodiments of the invention, protrusions on control surface 2 comprise pyramidal protrusions, i.e., pyramids with polygonal bases or pyramidal frusturns with polygonal bases. Each polygonal base is disposed on a first surface of control layer 19 and is defined by a plurality of line segments which lie in or on the plane of the control layer.

The polygonal bases of the protrusions are preferably selected from the group consisting of triangular bases, quadrilateral bases, pentagonal bases, hexagonal bases, heptagonal bases, octagonal bases, nonagonal bases and decagonal bases. In a most preferred embodiment, as illustrated in all FIGS. except FIG. 9, the protrusions are triangular pyramids, i.e., three-sided pyramids having triangular bases. The polygonal bases of the protrusions are typically immediately adjacent one another such that there is no land separating the polygonal bases.

The line segments defining the sides of the polygonal base of each pyramidal protrusion are preferably relatively equal in length, but need not be. By relatively equal, it is meant that the length of the shortest line segment is equal to at least about 50 percent of the length of the longest line segment. Most preferably, the line segments defining the sides of the polygonal base of each pyramidal protrusion are equal in length. Each line segment is typically between about 5 and about 75 mils (125 and 1,875 micrometers), but preferably is between about 5 and about 30 mils (125 and 750 micrometers), and most preferably between about 10 and about 20 mils (250 and 500 micrometers), in length.

As previously stated, referring again to FIGS. 3 and 4, the sheeting of the invention can include optional release liners and optional permanent adhesive layers. Permanent adhesive layers typically comprise an adhesive selected to provide a strong bond to the substrate article to which the resultant sheeting is to be applied. For example, heat-activated adhesives, pressure-sensitive adhesives, and mixtures thereof can be used. An illustrative example of a useful adhesive is that known under the trade designation "3M Adhesive Transfer Tape 950" from Minnesota Mining and Manufacturing Company. Many suitable epoxy, urethane, and acrylic adhesives are commercially available.

In some instances, the protrusions of the control surface may be made of a first, relatively hard and highly durable material, and the control layer 19 may be made of a relatively more flexible material. Further, the material of the protrusions can comprise an abrasive or other filler. Further, all or a portion of each protrusion can be filled with a fluid, e.g., a gas such as air or nitrogen. If a gas were used, the pressure of the gas within each protrusion would have to be selected to provide the protrusions with the desired amount of compressibility.

Properly constructed articles of the invention generally exhibit a combination of high durability and friction due to

the coupling of hard protrusions (e.g., polycarbonate), which are typically substantially incompressible and non-collapsible, with a more conformable, flexible material (e.g., polyurethane) that results in a more cushioned impact during use.

The control layer of some embodiments of articles of the invention can be made using techniques which are somewhat similar to those used to make cube-corner retroreflective sheetings. It will be understood, however, that the control layer is preferably transparent, and can be made in a variety of transparent colors if desired. For example, referring to FIG. 2a, control layer 19 can be made such that it will retroreflect less than about 10 percent of a beam of electromagnetic radiation which is incident at any angle to control surface 2, the electromagnetic radiation having any wavelength within the visible light or infrared radiation regions, i.e., wavelengths ranging from about 0.39 micrometers to about 1,000 micrometers. Thus, at least a portion of control layer 19 can have a structure similar to retroreflective sheetings, but need not be retroreflective. This means that control layer 19 can be made of less expensive materials because optical performance is not a concern. Further, control layer 19 need not necessarily be manufactured in as precise a manner as retroreflective sheetings since optical performance is not needed.

A control layer 19 useful in the invention may be formed by cutting a series of v-shaped grooves into a solid sheeting, molding a sheeting with the desired precisely shaped protrusions thereon, or molding precisely shaped protrusions and then applying them to a desired backing sheet. Many of the techniques used for fabricating cube-corner retroreflective sheeting may be used to form the control layers useful in the invention, with the important advantage that the optical properties critical to retroreflective sheetings are not necessary for sheets of the invention. U.S. Pat. No. 4,576,850 (Marlens), which is incorporated in its entirety herein by reference, discloses a process for replicating microstructured surfaces that may be used in making sheetings of the invention. U.S. Pat. No. 3,689,346 (Rowland) also discloses a method comprising applying a hardenable molding material over a mold having a multiplicity of cube-corner formations therein.

Desired flexibility, elasticity, and conformability of the inventive article is dependent in part upon the desk or other surface to which it is to be applied. It is preferred that the repositionable article be somewhat elastic and conformable so as to give or compress under pressure of a track ball when the article is used as a mouse pad. During use, it is possible that the table or surface may be flexible, such as when the mouse pad of the invention is placed over a conventional "foam-backed" mouse pad. Accordingly, a mouse pad of the invention for use thereon should be flexible, as described above.

In general, an article of the invention useful as a mouse pad can be repositionably secured to any surface over which the mouse traverses.

Other modifications and uses of the articles of the invention will become apparent to those skilled in the art. The articles of the invention may be of use in airplanes as covers for pull-down trays, or as coasters for drink containers. The control surface may have thereon a coating such that it will receive indicia, such as a 95/5 weight ratio coating of methyl methacrylate/N-vinyl pyrrolidone copolymer such as those coatings typically applied to the face of overhead transparencies. The article may be formed to contain a pocket such that photos or artwork can be inserted therein, or folding lines may be formed into the article such that it forms a flap

wherein an or photos can be contained. These modifications and alterations of the invention are considered within the scope of the following claims.

What is claimed is:

1. A repositionable article having a microstructured surface comprising:
 - a) a removable and rebondable adhesive layer having first and second surfaces;
 - b) a control layer having a control surface and a back surface, the second surface of the adhesive layer adhered to the back surface of the control layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions.
2. Article in accordance with claim 1, wherein said adhesive layer comprises a rebondable adhesive exhibiting a peel adhesion ranging from about 22 to about 275 grams per cm.
3. Article in accordance with claim 1, wherein said adhesive layer comprises a binder material having embedded therein and protruding from an exposed surface thereof, elastomeric, inherently tacky, acrylate copolymer microspheres.
4. Article in accordance with claim 1, wherein said control layer is transparent.
5. Article in accordance with claim 1, wherein said control layer consists essentially of a polymeric organic material.
6. Article in accordance with claim 1 having a graphic representation positioned between the adhesive layer and control layer.
7. Article in accordance with claim 1 having a graphic representation positioned on the control surface.
8. Article in accordance with claim 1 having an antistatic agent dispersed in the control layer.
9. Article in accordance with claim 1 having an antistatic agent coated onto the control surface.
10. Article in accordance with claim 1 having a fluorochemical dispersed in the control layer.
11. Article in accordance with claim 1 having a fluorochemical coated onto the control surface.
12. Article in accordance with claim 1 having a copolymer coating on the control surface, the copolymer comprising about 95 weight percent of polymerized methyl methacrylate units and about 5 weight percent polymerized N-vinyl pyrrolidone units.
13. Article in accordance with claim 1 wherein said adhesive comprises a pressure-sensitive adhesive layer comprising a plurality of spaced clumps of particles substantially uniformly distributed over and protruding from one face of the pressure-sensitive adhesive layer, the tips of the clumps of particles being substantially free from the pressure-sensitive adhesive.
14. A repositionable article having a microstructured surface comprising:
 - a) a removable and rebondable first adhesive layer having first and second surfaces;
 - b) a substrate layer having first and second surfaces, the second surface of the first adhesive layer adhered to the first surface of the substrate layer;
 - c) a second adhesive layer having first and second surfaces, the first surface of the second adhesive layer adhered to the second surface of the substrate layer; and
 - d) a control layer having a control surface and a back surface, the back surface adhered to the second surface of the second adhesive layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions.

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15. Article in accordance with claim 14 wherein said substrate layer is selected from a group consisting of plastic and paper.

16. Article in accordance with claim 14 wherein said first adhesive layer comprises a binder material having embedded therein and protruding from an exposed surface thereof, elastomeric, inherently tacky, acrylate copolymer microspheres.

17. Article in accordance with claim 14 wherein said first adhesive layer comprises a pressure-sensitive adhesive layer comprising a plurality of spaced clumps of particles substantially uniformly distributed over and protruding from one face of the pressure-sensitive adhesive layer, the tips of the clumps of particles being substantially free from the pressure-sensitive adhesive.

18. Article in accordance with claim 14, wherein said second adhesive layer is a permanent adhesive.

19. Article in accordance with claim 14, wherein said control surface consists of a uniform array of a plurality of pyramids having a height ranging from about 2.54×10^{-3} cm to about 0.1 cm.

20. Article in accordance with claim 14 wherein said substrate layer is a foamed material.

21. Article in accordance with claim 14, wherein said control layer is transparent.

22. Article in accordance with claim 21, wherein said substrate layer has between its second surface and the first surface of said second adhesive a graphic design adhered therebetween.

23. Article in accordance with claim 14, wherein said first adhesive layer has a peel adhesion ranging from about 22 to about 275 grams per cm.

24. A kit for use in producing a repositionable sheet member, the kit comprising:

- a) a first sheet member consisting of:
 - 1) a first release liner material having first and second surfaces;
 - 2) a first adhesive layer having first and second surfaces, the second surface of the first adhesive layer removably adhered to the first surface of the first release liner material; and
 - 3) a control layer having a control surface and a back surface, the back surface of the control layer adhered permanently to the first surface of the first adhesive layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions; and
- b) a second sheet material consisting of:
 - 1) a second release liner material having first and second surfaces;
 - 2) a removable and rebondable second adhesive layer having first and second surfaces, the second surface of the second adhesive layer adhered to the first surface of the second release liner material; and
 - 3) a substrate layer having first and second surfaces, the second surface of the substrate layer adhered to the first surface of the second adhesive layer, and the first surface of the substrate layer adapted to be permanently adhered to the first surface of the first adhesive layer when the first release material is removed from the first adhesive layer and the first adhesive layer and substrate layer are joined.

25. Kit in accordance with claim 24 wherein said second adhesive layer comprises a binder material having embedded therein and protruding from an exposed surface thereof, elastomeric, inherently tacky, acrylate copolymer microspheres.

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26. Kit in accordance with claim 24 wherein said second adhesive layer comprises a pressure-sensitive adhesive layer comprising a plurality of spaced clumps of particles substantially uniformly distributed over and protruding from one face of the pressure-sensitive adhesive layer, the tips of the clumps of particles being substantially free from the pressure-sensitive adhesive.

27. Kit in accordance with claim 24 further comprising a graphic layer, the graphic layer positioned either between the first adhesive layer and the control layer, or adhered to the second surface of the substrate layer.

28. A kit adapted to be manipulated by the user into a repositionable article having a microstructured surface, comprising:

- a) a first sheet material having a control surface and a back surface, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions; and
- b) a second sheet material comprising:
 - 1) a first release material having first and second surfaces;
 - 2) a removable and rebondable adhesive layer adapted to be attached to the back surface of the control layer, the adhesive layer having first and second surfaces, the second surface of the adhesive layer removably adhered to the first surface of the first release material; and
 - 3) a second release material having first and second surfaces, the second surface of the second release material removably adhered to the first surface of the adhesive layer.

29. Kit in accordance with claim 28 wherein said adhesive layer comprises a binder material having embedded therein and protruding from an exposed surface thereof, elastomeric, inherently tacky, acrylate copolymer microspheres.

30. Kit in accordance with claim 28 wherein said adhesive layer comprises a pressure-sensitive adhesive layer comprising a plurality of spaced clumps of particles substantially uniformly distributed over and protruding from one face of the pressure-sensitive adhesive layer, the tips of the clumps of particles being substantially free from the pressure-sensitive adhesive.

31. A repositionable article having a microstructured surface comprising:

- a) a removable and rebondable first adhesive layer having first and second surfaces;
- b) a first substrate material having first and second surfaces, the second surface of the first substrate material adhered to the first surface of the first adhesive layer;
- c) a second adhesive layer having first and second surfaces, the second surface of the second adhesive layer adhered to the first surface of the first substrate layer;
- d) a second substrate layer having first and second surfaces, the second surface of the second substrate layer adhered to the first surface of the second adhesive layer;
- e) a third adhesive layer having first and second surfaces, the second surface of the third adhesive layer adhered to the first surface of the second substrate material; and
- f) a control layer having a control surface and back surface, the back surface of the control layer adhered to the first surface of the third adhesive layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions.

32. Kit in accordance with claim 31 wherein said first adhesive layer comprises a binder material having embed-

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ded therein and protruding from an exposed surface thereof, elastomeric, inherently tacky, acrylate copolymer microspheres.

33. Kit in accordance with claim 31 wherein said first adhesive layer comprises a pressure-sensitive adhesive layer comprising a plurality of spaced clumps of particles substantially uniformly distributed over and protruding from one face of the pressure-sensitive adhesive layer, the tips of the clumps of particles being substantially free from the pressure-sensitive adhesive.

34. Kit in accordance with claim 31 wherein said control layer is transparent.

35. Kit in accordance with claim 31 wherein a graphics layer lies in between said second substrate layer and said third adhesive layer.

36. A kit including first and second sheet-like articles, the kit comprising;

- a) the first sheet-like article consisting of:
 - 1) a first release material having first and second surfaces;
 - 2) a first adhesive layer having first and second surfaces, the second surface of the first adhesive layer removably adhered to the first surface of the first release layer; and
 - 3) a control layer having a control surface and a back surface, the back surface adhered to the first surface of the first adhesive layer, the control layer defined as above; and
- b) said second sheet-like article consisting of:
 - 1) a second release material having first and second surfaces;
 - 2) a removable and rebondable second adhesive layer having first and second surfaces, the second surface of the second adhesive layer removably adhered to the first surface of the second release material;
 - 3) a first substrate layer having first and second surfaces, the second surface of the first substrate layer adhered to the first surface of the second adhesive layer;
 - 4) a third adhesive layer having first and second surfaces, the second surface of a third adhesive layer adhered to the first surface of the first substrate layer; and
 - 5) a second substrate layer having first and second surfaces, the second surface of the second substrate layer adhered to the first surface of the third adhesive layer.

37. Kit in accordance with claim 36 wherein said second adhesive layer comprises a binder material having embedded therein and protruding from an exposed surface thereof, elastomeric, inherently tacky, acrylate copolymer microspheres.

38. Kit in accordance with claim 36 wherein said second adhesive layer comprises a pressure-sensitive adhesive layer comprising a plurality of spaced clumps of particles substantially uniformly distributed over and protruding from one face of the pressure-sensitive adhesive layer, the tips of the clumps of particles being substantially free from the pressure-sensitive adhesive.

39. Kit in accordance with claim 36, wherein said control layer is transparent.

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40. Article in accordance with claim 36 which further comprises a graphics layer adhered to the first surface of the second substrate.

41. A kit including first and second sheet-like articles comprises;

- a) a first sheet-like article consisting of a control layer having a control surface and a back surface, the back surface adapted to be contacted with a second sheet-like article, the control surface defined as above; and
- b) a second sheet-like material consisting of:
 - 1) a first release material having first and second surfaces;
 - 2) a removable and rebondable first adhesive layer having first and second surfaces, the second surface of the first adhesive layer removably adhered to the first surface of the first release material;
 - 3) a substrate layer having first and second surfaces, the second surface of the substrate layer adhered to the first surface of the first adhesive layer;
 - 4) a second adhesive layer having first and second surfaces, the second surface of the second adhesive layer adhered to the first surface of the substrate layer; and
 - 5) a second release material having first and second surfaces, the second surface of the second release material removably adhered to the first surface of the second adhesive layer, the second release material and the first release material adapted to be removed from the second sheet-like article, and the first surface of the second adhesive layer adapted to be adhered to the second surface of the control layer.

42. Kit in accordance with claim 41 wherein said first adhesive layer comprises a binder material having embedded therein and protruding from an exposed surface thereof, elastomeric, inherently tacky, acrylate copolymer microspheres.

43. Kit in accordance with claim 41 wherein said first adhesive layer comprises a pressure-sensitive adhesive layer comprising a plurality of spaced clumps of particles substantially uniformly distributed over and protruding from one face of the pressure-sensitive adhesive layer, the tips of the clumps of particles being substantially free from the pressure-sensitive adhesive.

44. A support article from which sheet-like pressure sensitive adhesive-backed articles can be removed, the article comprising a plurality of repositionable articles each having a microstructured surface, each repositionable article comprising:

- a) a removable and rebondable adhesive layer having first and second surfaces;
- b) a control layer having a control surface and a back surface, the second surface of the adhesive layer adhered to the back surface of the control layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions,

the repositionable articles being relatively disposed so that at least a portion of the control surface contacts at least a portion of the first surface of the adhesive layer of an underlying repositionable article.

45. The support article of claim 44 wherein the repositionable articles are disposed in the form of a stack.

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46. The support article of claim 44 wherein the repositionable articles are disposed in the form of a roll.

47. The support article of claim 44 further comprising a support member upon which is mounted one or more of said repositionable articles.

48. A repositionable article having a microstructured surface comprising:

- a) a non-adhesive, high friction layer having first and second surfaces;

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- b) a control layer having a control surface and a back surface, the second surface of the non-adhesive, high friction layer adhered to the back surface of the control layer, the control surface defined by an array of a plurality of precisely shaped raised regions and a plurality of recessed regions.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO.: 5,508,084
DATED: April 16, 1996
INVENTOR(S): Reeves et al.

It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 12, line 43, Delete "2fillustrate" and insert --2f illustrate--

Signed and Sealed this
Eleventh Day of February, 1997

Attest:



BRUCE LEHMAN

Attesting Officer

Commissioner of Patents and Trademarks

ATTORNEY DOCKET NO. 5923.0001

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

IN RE APPLICATION OF	:	Goecke
TITLE	:	Adhesive Tape
SERIAL NO.	:	10/674,108
FILING DATE	:	September 29, 2003
ART UNIT	:	1788
CONFIRMATION NO.	:	2438
ATTORNEY DOCKET NO.	:	5923.0001

Exhibit G

Hornibrook U.S. Patent 4,248,762

United States Patent [19]

[11] 4,248,762

Hornibrook et al.

[45] Feb. 3, 1981

[54] PRESSURE SENSITIVE PRODUCTS WITH
DECORATIVE APPEARANCE[75] Inventors: Walter J. Hornibrook, Newburgh;
Ronald A. Lombardi, New Windsor,
both of N.Y.[73] Assignee: Stauffer Chemical Company,
Westport, Conn.

[21] Appl. No.: 893,926

[22] Filed: Apr. 5, 1978

Related U.S. Application Data

[62] Division of Ser. No. 816,236, Jul. 18, 1977.

[51] Int. Cl.³ C08K 3/08[52] U.S. Cl. 260/42.22; 427/208.4;
428/328; 428/356[58] Field of Search 428/40, 328, 335, 336,
428/337, 906, 317, 355, 356, 323; 156/327, 332;
427/207 B, 208.4; 252/512, 511; 260/37, 42.52,
42.22, 37 M

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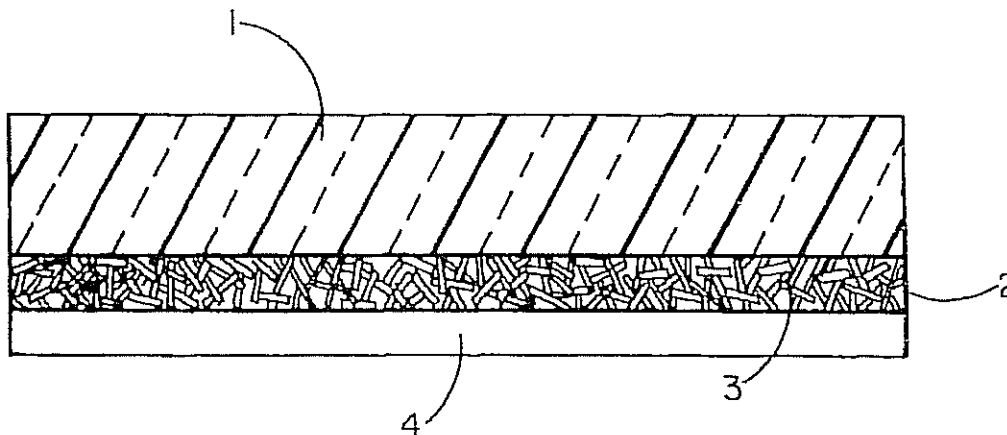
Primary Examiner—Stanley S. Silverman

Attorney, Agent, or Firm—Richard P. Fennelly

[57] ABSTRACT

A pressure sensitive product with a decorative appearance is disclosed which comprises: (a) a substantially transparent plastic film; (b) a layer of pressure sensitive adhesive attached to the film, said layer containing non-leafing metallic flakes; and, (c) optionally, a release liner attached to the adhesive. Such a product is easily repositioned when first applied without substantial pressure to a desired substrate. After application of such pressure, the product exhibits superior adhesion as compared to a control product not containing the metallic flakes.

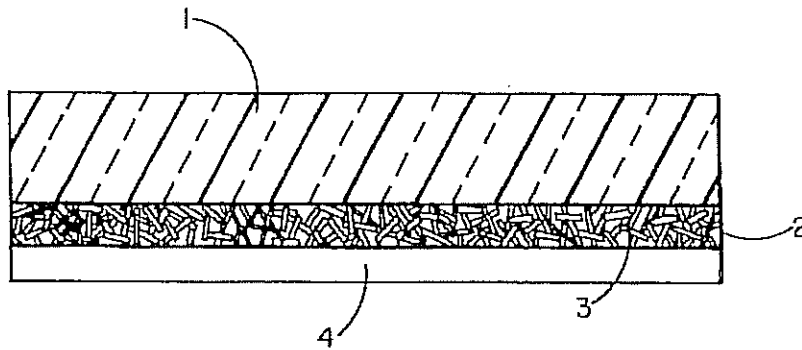
7 Claims, 1 Drawing Figure



U.S. Patent

Feb. 3, 1981

4,248,762



FIGURE

PRESSURE SENSITIVE PRODUCTS WITH DECORATIVE APPEARANCE

This is a division of application Ser. No. 816,736 filed July 18, 1977.

BACKGROUND OF THE INVENTION

1. Field of the Invention

The present invention is a pressure sensitive plastic film product with a decorative appearance which is useful, for example, as trim or a decorative marking on vehicles.

2. Description of the Prior Art

Pressure sensitive products with a decorative appearance, for example, a metallic or pigmented appearance, have been formed in the past using plastic films which are substantially transparent. In such products a thin coating which provides opacity and background color, sometimes referred to as a "blotch" coat, comprising ink and pigment has been juxtaposed between one side of the film and a pressure sensitive adhesive/release liner subcombination. In these known products, the blotch coat was quite thin, and the amount of pigment was quite critical if the desired properties were to be obtained. Inclusion of too little pigment resulted in a product not having the desired degree of opacity for the intended decorative effect. If too much pigment was present, the desired degree of opacity was achieved but the cohesive strength of the blotch coat was severely diminished leading to delamination of the pressure sensitive product.

SUMMARY OF THE PRESENT INVENTION

The present invention is a pressure sensitive product having a decorative appearance which comprises: (a) a substantially transparent plastic film; (b) a layer of pressure sensitive adhesive attached to the film, said layer containing non-leafing metallic flakes; and (c) optionally, a release liner attached to the adhesive. Such a pressure sensitive product is surprisingly, easily repositionable when first applied without substantial pressure to a desired substrate. However, after pressure is applied to affix it to the substrate in a desired position, it ultimately exhibits superior adhesion as compared to a control product not containing the metallic flakes.

BRIEF DESCRIPTION OF THE DRAWING

The FIGURE which is attached hereto and which forms a part of the specification is an enlarged cross-sectional view of a pressure sensitive product made in accordance with the present invention.

DETAILED DESCRIPTION OF PREFERRED EMBODIMENTS

The pressure sensitive product of the present invention will be more fully understood by referring to the Drawing which forms a portion of this application. In the Drawing, a preferred embodiment of the present invention is shown in cross-section wherein a substantially transparent plastic film 1 has laminated to one of its sides, a layer of pressure sensitive adhesive 2 containing non-leafing metallic flakes 3. A release liner 4 preferably covers the side of the adhesive layer 3 which is opposite film 1 in order to protect the adhesive from contamination from dirt or other solid or liquid contaminants.

The plastic film 1 may be any conventional, substantially transparent and flexible film known to persons of ordinary skill in the art of fabricating decorative pressure sensitive products. The term "substantially transparent" as used herein is intended to encompass those plastic films which are transparent enough to allow a viewer to perceive the decorative effect generated by the metallic flakes 3 in the adhesive 2. The film thickness will generally range from about 2 mils (0.05 mm.) to about 20 mils (0.5 mm.), and the film can be a homopolymer or copolymer of vinyl chloride, the preferred film material, a polyester resin, a cellulose resin, or the like. Films of this type are well known to the art and have been used heretofore in forming decorative laminates which differ in construction from the present laminate.

The pressure sensitive adhesive 2 which is used in the present laminate may also be any of the pressure sensitive adhesives which are known and conventionally used in the art. As for the applicable tacky, pressure sensitive adhesives which may be utilized in the product of this invention, they may be based upon an elastomeric material such as: (1) natural rubber; (2) synthetic rubbers including, for example, styrene-butadiene copolymers, polyisobutylene, butadiene-acrylonitrile copolymers, polychloroprene, and polyisoprene; (3) acrylic copolymers containing at least 50 percent, by weight, of a C₄-C₁₂ alkyl acrylate ester, i.e., an alkyl acrylate ester wherein the alkyl group contains from 4 to 12 carbon atoms, together with a hardening comonomer, for example, vinyl acetate, styrene, methyl methacrylate, methyl acrylate, ethyl acrylate, ethyl methacrylate, and vinyl chloride; and (4) polymers of alkyl vinyl ethers such, for example, as polymethyl vinyl ether and polyethyl vinyl ether. Acrylic pressure sensitive adhesives are most preferred since they have the best balance of adhesive and cohesive properties for the present laminate. The thickness of the adhesive layer 2 will generally be in the range of from about 0.5 mil (0.013 mm.) to about 2.0 mils (0.05 mm.).

The pressure sensitive adhesive layer 2 contains an effective amount of non-leafing metallic flakes 3 to produce a desired decorative effect and to surprisingly increase the adhesion of the product after it has been applied with pressure to a desired substrate. These flakes 3 are homogeneously dispersed throughout the adhesive layer 2 by means of conventional mixing apparatus. The term "non-leafing metallic flakes" is well known in the art and such products can be formed by means well known to persons of ordinary skill in the art. For purposes of the present invention, non-leafing aluminum flakes are preferred, and the following description of its method of manufacture and properties will sufficiently apprise a person of ordinary skill in the art as to how this metallic component might be formed.

The aluminum flake which can be employed in the preparation of the laminate of the instant invention can be prepared in several ways. The most common means of obtaining aluminum flake is to atomize molten aluminum and subsequently grind it or hammer it in the presence of various lubricants. If the lubricant is a long chain saturated fatty acid, the prepared flake is not easily wetted by a resinous adhesive vehicle and tends to float to the surface subsequent to application, giving a more or less continuous layer of aluminum flakes. This phenomenon is called leafing. Such leafing flakes are not suitable for use in the laminate of the present invention. It is therefore desirable to remove the long chain fatty acid or to grind or hammer the atomized alumi-

num in the presence of other materials such as, for example, the short chain fatty acids. The flakes thus produced are more easily wetted by the resinous adhesive vehicle and tend to become randomly dispersed rather than to float and are therefore less likely to layer at the surface during the curing or drying of the adhesive.

The aluminum flake can, if desired, be subjected to various treatments which impart a gloss or polish thereto. These polished aluminum flakes may then be utilized when a highly reflective decorative effect is to be generated by the laminate of the present invention.

These non-leafing aluminum flake particles are plate-like in appearance but have a ragged edge which follows no geometrical design which may be observed as being peculiar to the flakes in general. The flatness or plate-like appearance of the flake is generally determined by the method by which the flakes were prepared. The hammered flakes tend to be more flat than the ball milled; however, both may be used with equally good results. For a more complete description of non-leafing aluminum flake and the methods of preparation, reference is made to *Organic Coating Technology*, Payne, vol. II, 1961.

The particle size of the flake should be predominantly from about 100 mesh to about 200 mesh. However, substantial amounts may be above 100 mesh and up to 60 mesh. A predominant number and preferably about 80 percent of the particles should be from about 200 to about 60 mesh. Excellent compositions may be made using flake having as much as 15 percent — 325 mesh which aids suspension.

It is quite significant that at least the predominant amount of the aluminum flakes have a particle size in the range of from 200 to 60 mesh. As a substantial number of the particles approach a smaller size (— 325 mesh) there are an insufficient number of larger planar surfaces provided in the adhesive to give the desired degree of opacity needed.

The aluminum flake particles are employed in amounts of at least about 5 percent by weight of the adhesive layer with a maximum of about 20 percent. Optimum effects have been obtained when amount of flake is present at about 12%, by weight of the adhesive. Use of too little flake will not give the desired decorative effects, whereas amounts higher than described above will weaken the adhesive/substrate bond. It is preferred that from about 10 percent to about 15 percent of the flake be used.

If desired, a tinting pigment may be added to the flake containing composition. Examples of such pigments which may preferably be used include phthalocyanine green, phthalocyanine blue, indanthrene yellow, burnt sienna, indo orange, phthalocyanine blue green tone, carbon black, phthalocyanine blue red shade, quinacridone red and hydrated iron oxide.

One suitable non-leafing aluminum flake product which is commercially available from Alcan Metal Powder, Inc. is known by the grade designation "Grade MD-3100".

If the laminate of the present invention is to be manufactured at one location and used at another location, a release liner 4 is preferably affixed to the side of the pressure sensitive layer 3 which is furthest removed from film 1. The release liner 4 may be any of the release liners known to persons of ordinary skill in the art of making pressure sensitive products including removable, water soluble protective coatings, and the like. One preferred liner material is silicone coated release

paper having a thickness of from about 2.0 mils (0.05 mm.) to about 12 mils (0.3 mm.). Of course, if the film/adhesive composite is to be manufactured and applied to a desired substrate at the same manufacturing location, a release liner may not be needed.

The laminate of the present invention can be formed by any of the techniques used to form pressure sensitive films. In a preferred embodiment, when a release liner, such as release paper, is to be used, the adhesive formulation in solvent form containing the non-leafing metallic flakes is applied to the release liner and the adhesive/release liner composite is heated to dry the adhesive layer. This combination is then laminated to the plastic film to form the final product. In those few applications wherein the product is not intended to have a release liner, the adhesive/metallic flake composite can be cast onto the vinyl film, and the adhesive layer in the resulting laminate can be dried as needed.

The following Examples show certain preferred embodiments of the present invention:

EXAMPLE I

This Example illustrates a procedure for forming a decorative pressure sensitive product in accordance with the present invention.

A transparent, plasticized polyvinyl chloride (PVC) film was heat laminated to itself on a lamination machine by passing two layers of such film over a series of hot drums in order to achieve a heat seal temperature of about 300° F. (149° C.). The PVC film was simultaneously embossed on one side with a brushed silk pattern at the lamination point. The film that resulted had a thickness of 8 mils (0.2 mm.).

An adhesive formulation was then prepared which comprised 100 gm. of a 30%, by weight, solids acrylic pressure sensitive adhesive polymer and 3 gm. of a non-leafing, finely divided aluminum flake. The adhesive that was used was a high molecular weight thermoplastic acrylic terpolymer available as "Durotak 80-1053" from National Starch and Chemical Corp. The aluminum flake that was used is commercially available from Alcan Metal Powder, Inc. as "Grade MD-3100".

The adhesive and aluminum flake were mixed together for from about 5 to about 10 min. at high speed to effectively disperse the aluminum flake particles. The adhesive/aluminum flake composition was then coated onto silicone coated release paper using a laboratory coating blade. Removal of the volatiles from this coated layer was accomplished by drying the layer for 2 minutes at 250° F. (121° C.) in an oven. The dried adhesive thickness was about 1.2 mils (0.03 mm.).

The resultant adhesive coated release paper was then laminated to the unembossed side of the transparent PVC film by passing both the film and release paper through a laboratory nip roller at sufficient pressure to insure intimate contact of the adhesive with the film. This PVC film/adhesive/release liner laminate was then conditioned for 16 hours at laboratory ambient conditions to allow the adhesive to form a strong bond to the film. The opacity and aesthetics of the laminate were judged to be satisfactory.

Peel adhesion of the product was then determined by bonding one inch (2.54 cm.) strips of the PVC/adhesive laminate (after removal of the release liner) to a stainless steel panel using the standard Pressure Sensitive Tape Council 4.5 pound (2.04 kg.) roller. Peel adhesion at 180° C. was then measured after a 24 hour wetout or

"dwell" period on a Thwing-Albert type tester. The value achieved was about 7.5 pounds per linear inch (ppli) or about 1.34 kg. per linear cm. Virtually all of the adhesive remained on the film thereby demonstrating both high adhesive strength to the film and high cohesive strength, the former being of more importance when the product is to be used as a permanent decorative film on a desired substrate.

A Control laminate, lacking the aluminum flake, yielded a peel adhesion of only 5.5 ppli (0.98 kg./linear cm.).

One advantage of the aluminum flake containing laminate as compared to the control laminate was the greater ease of repositionability that it exhibited. The presence of the flake reduced the "quick grab" of the adhesive allowing for initial repositioning of the laminate.

EXAMPLE 2

In another experiment, two other leafing, rather than non-leafing, aluminum flakes ("Grade MD-2100" and "Grade MD-5100" from Alcan Metal Powder, Inc.) were tried in similar amounts but they produced poor adhesion of the adhesive to the vinyl film when tested as above after 20 min. and 24 hr. dwell times on the substrate. The results of all tests are set forth in the Table which follows. All values are given as force (either lbs. or kg.) per linear (abbreviated "l.") unit of measure (either in. or cm.):

Stainless Steel Adhesion

No.	Metallic Flakes	20 min. Dwell	24 hr. Dwell
1.	None (control)	2 lbs. 6 oz./l. in. (0.43 kg./l. cm.)	4 lbs. 10 oz./l. in. (0.82 kg./l. cm.)
2.	Non-leafing ¹	3 lbs. 4 oz./l. in. (0.58 kg./l. cm.)	9 lbs./l. in. (1.61 kg./l. cm.)
3.	Leafing ²	3 lbs. 4 oz./l. in. (0.58 kg./l. cm.)	4 lbs. 8 oz./l. in. (0.8 kg./l. cm.)
4.	Leafing ³	4 lbs. 10 oz./l. in. (0.8 kg./l. cm.)	6 lbs./l. in. (1.07 kg./l. cm.)

¹Grade MD-3100" from Alcan Metal Powder, Inc.

²Grade MD-2100" from Alcan Metal Powder, Inc.

³Grade MD-5100" from Alcan Metal Powder, Inc.

Each of the above samples had the following peel adhesions after one minute: No. 1—3.5 lbs./l. in. (0.63 kg./l. cm.);

No. 2—1.3 lbs./l. in. (0.23 kg./l. cm.); No. 3—2.4 lbs./l. in. (0.43 kg./l. cm.); and No. 4—2.9 lbs./l. in. (0.52 kg./l. cm.). No. 2, the product of this invention, has the lowest initial tack but the highest adhesion after 24 hr. dwell times.

After 20 minutes, when the film/adhesive laminates were peeled back from the panel, product Nos. 1 and 2 showed no transfer of adhesive to the plate from the film whereas products Nos. 3 and 4 showed transfer of adhesive. After 24 hours, product No. 1 showed no transfer, product No. 2 showed cohesive failure of the adhesive as illustrated by adhesive remaining on both film and panel, and products Nos. 3 and 4 showed failure of the adhesive to the film as illustrated by most of the adhesive being left on the panel. In those end uses where the product is to be left permanently on the object, these observations are merely of interest as to how the internal strength of the adhesive (cohesive strength) and bond strength of adhesive to film and/or substrate (adhesive strength) are related. Adhesion strength would be unquestionably the most important property.

EXAMPLE 3

Approximately 2000 yards (1835 m.) of a 4 mil (0.01 mm.) transparent PVC film was heat laminated to itself and was simultaneously embossed on one side with a shallow brushed silk roll.

An adhesive formulation was prepared by mixing 300 gm. of the acrylic adhesive used in Example 1, 15 gm. of ethyl acetate, 15 gm. of toluene and 12 gm. of the non-leafing aluminum flake used in Example 1. The mixing was performed at high speed on a Cowles type dissolver until the flake was completely dispersed in the adhesive solution. The viscosity of the formulation after mixing was about 2000 cps. (Brookfield viscosity 25° C., No. 2 spindle 20 rpm.).

The adhesive formulation containing the aluminum flakes was then applied to 90 pound basis weight, bleached kraft, silicone coated release paper using a reverse roll coater. A streak-free, uniform coating of adhesive on the release paper was produced, and the adhesive coating was dried by passing the adhesive/-release paper laminate through an oven at 140° F. (60° C.) for 40 seconds followed by passage through a second oven at 270° F. (132° C.) for 45 seconds.

This adhesive/release paper laminate was then laminated to the unembossed side of the transparent PVC film as described in Example 1.

The resulting product was then tested against a control product that did not contain aluminum flakes in the adhesive using the test procedures described in Example 1. The adhesion at 180° was measured on stainless steel and lacquered panels using the same test method as described in Example 1. The results are given below in pounds per linear inch and (in parenthesis) in kilograms per linear centimeter:

Stainless Steel Adhesion

Film	20 min. Dwell	24 hr. Dwell
Film of this invention	4.2 (0.75)	10.3 (1.84)
Control	3.4 (0.61)	6.6 (1.18)

The 20 min. dwell readings showed no adhesive transfer from the film to the substrate, whereas both 24 hour dwell readings showed slight transfer using the same units given above:

Lacquer Painted Panel Adhesion

Film	30 min. Dwell	24 hr. dwell
Film of this invention	5.6 (1.0)	11.4 (2.04)
Control	5.6 (1.0)	6.5 (1.16)

At 30 minutes no adhesive transfer was noted for the film of this invention as compared to slight transfer for the control film. After 24 hours on the panels, both films showed cohesive failure as evidenced by transfer of substantial amounts of adhesive to the panel.

The films were also tested to determine the resistance by the adhesive to shrinkage of the vinyl film. This was evaluated by bonding a 1 inch x 10 inch (2.54 cm. x 25.4 cm.) adhesive coated film cut in the direction of travel of the film in the laminator to an aluminum panel with a standard 4.5 pound roller. The ends of the film were scored with a razor blade and after a 2 hour wet out period at room temperature the assembly was placed in

a 230° F. (121° C.) oven for 30 minutes. Growth of the razor cut was measured with a magnifier after the film was cooled to room temperature. The film of this invention had a mounted shrinkage of 1/64" (0.04 cm.), whereas the control film had a shrinkage of 2/64" (0.08 cm.)

EXAMPLE 4

This Example compares the adhesion of a film of the present invention (Film A) to that exhibited by the type of decorative film known to the prior art (Film B).

Film A was an 8 mil (0.2 mm.) transparent polyvinyl chloride film that had been prepared by laminating two 4 mil (0.1 mm.) films together followed by application of adhesive containing non-leafing aluminum flakes as described in Example 1.

Film B was a 7 mil (0.175 mm.) transparent polyvinyl chloride film made by laminating a 3 mil (0.075 mm.) transparent film to the vinyl side of a 4 mil (0.100 mm.) film that had previously been printed on one side with a silver ink for decorative purposes. The same adhesive used in making Film A was applied to the silver ink side of the 7 mil film without the presence of the aluminum flakes.

Both films were applied to lacquer painted stainless steel panels and the peel adhesion was measured after the two films had been subjected to various environmental conditions for various lengths of time. The procedure described in Example 1 was employed to mount the films and measure the peel adhesion. The Table that is given below sets forth the results that were obtained in pounds/linear inch and (in parenthesis) kg./linear centimeter:

Condition	Time	Adhesion of Film	
		A	B
Room Temperature	72 hrs.	10.5 (1.88)	5.5 (0.98)
158° F. (70° C.)	7 days	10.3 (1.84)	6.5 (1.16)
158° F. (70° C.)	14 days	9.5 (1.70)	6.5 (1.16)
158° F. (70° C.)	30 days	9.3	5.3

-continued

Condition	Time	Adhesion of Film	
		A	B
100° F. (37.8° C.)	7 days	(1.66) 10.5 (1.88)	(0.95) 6.5 (1.21)
100% Relative Humidity			

These data demonstrate the uniformly higher adhesion values for the film of the present invention as compared to the type of film known to the prior art.

The above Examples merely illustrate certain preferred embodiments of the present invention and should not be construed in a limiting sense. The scope of protection which is sought is set forth in the appended claims.

What is claimed:

1. In combination, a pressure sensitive adhesive with non-leafing metallic flakes having a predominant particle size of from 200 to 60 mesh homogeneously dispersed throughout said adhesive in an amount of from at least about 5% to about a maximum of about 20%, by weight of adhesive, to render a plastic film laminate containing a layer of said adhesive initially repositionable when applied to a substrate and to confer increased adhesion for said laminate after sufficient pressure is applied to the laminate to bond it to the substrate.

2. The combination of claim 1 wherein the metallic flakes are aluminum flakes.

3. The combination of claim 2 wherein the metallic flakes are present at from about 10 weight percent to about 15 weight percent of the adhesive.

4. The combination of claim 1 wherein the pressure sensitive adhesive is an acrylic pressure sensitive adhesive.

5. The combination of claim 1 wherein the metallic flakes are present at from about 10 weight percent to about 15 weight percent of the adhesive.

6. The combination of claim 1 wherein the adhesive is an acrylic pressure sensitive adhesive and the metallic flakes are aluminum.

7. The combination of claim 6 wherein the metallic flakes are present at from about 10 weight percent to about 15 weight percent of the adhesive.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 4,248,762

DATED : February 3, 1981

INVENTOR(S) : Walter J. Hornibrook et al.

It is certified that error appears in the above-identified patent and that said Letters Patent are hereby corrected as shown below:

Col. 2, line 21, "an" after "upon" should read -- any --.

Signed and Sealed this

Twenty-fifth Day of August 1981

[SEAL]

Attest:

GERALD J. MOSSINGHOFF

Attesting Officer

Commissioner of Patents and Trademarks

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.

PATENT APPLICATION FEE DETERMINATION RECORD Substitute for Form PTO-875					Application or Docket Number 10/674,108		Filing Date 09/29/2003		<input type="checkbox"/> To be Mailed	
APPLICATION AS FILED – PART I										
(Column 1)			(Column 2)		SMALL ENTITY <input checked="" type="checkbox"/>		OR		OTHER THAN SMALL ENTITY	
FOR	NUMBER FILED	NUMBER EXTRA	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)	RATE (\$)	FEE (\$)
<input type="checkbox"/> BASIC FEE (37 CFR 1.16(a), (b), or (c))	N/A	N/A	N/A		N/A		N/A		N/A	
<input type="checkbox"/> SEARCH FEE (37 CFR 1.16(k), (j), or (m))	N/A	N/A	N/A		N/A		N/A		N/A	
<input type="checkbox"/> EXAMINATION FEE (37 CFR 1.16(o), (p), or (q))	N/A	N/A	N/A		N/A		N/A		N/A	
TOTAL CLAIMS (37 CFR 1.16(i))	minus 20 =	*	X \$	=	OR	X \$	=	X \$	=	X \$
INDEPENDENT CLAIMS (37 CFR 1.16(h))	minus 3 =	*	X \$	=	OR	X \$	=	X \$	=	X \$
<input type="checkbox"/> APPLICATION SIZE FEE (37 CFR 1.16(s)) <div style="font-size: small;">If the specification and drawings exceed 100 sheets of paper, the application size fee due is \$250 (\$125 for small entity) for each additional 50 sheets or fraction thereof. See 35 U.S.C. 41(a)(1)(G) and 37 CFR 1.16(s).</div>										
<input type="checkbox"/> MULTIPLE DEPENDENT CLAIM PRESENT (37 CFR 1.16(j))										
* If the difference in column 1 is less than zero, enter "0" in column 2.			TOTAL		TOTAL		TOTAL		TOTAL	
APPLICATION AS AMENDED – PART II										
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT	02/23/2011	CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	- 13	Minus	-- 20	= 0	X \$26 =	0	OR	X \$	=
	Independent (37 CFR 1.16(n))	- 3	Minus	--- 3	= 0	X \$110 =	0	OR	X \$	=
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))								OR		
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								OR		
			TOTAL ADD'L FEE	0	OR	TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
(Column 1)			(Column 2)		(Column 3)		SMALL ENTITY		OR OTHER THAN SMALL ENTITY	
AMENDMENT		CLAIMS REMAINING AFTER AMENDMENT	HIGHEST NUMBER PREVIOUSLY PAID FOR	PRESENT EXTRA	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)	RATE (\$)	ADDITIONAL FEE (\$)
	Total (37 CFR 1.16(i))	-	Minus	--	=	X \$	=	OR	X \$	=
	Independent (37 CFR 1.16(n))	-	Minus	---	=	X \$	=	OR	X \$	=
<input type="checkbox"/> Application Size Fee (37 CFR 1.16(s))								OR		
<input type="checkbox"/> FIRST PRESENTATION OF MULTIPLE DEPENDENT CLAIM (37 CFR 1.16(j))								OR		
			TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE		OR	TOTAL ADD'L FEE	
* If the entry in column 1 is less than the entry in column 2, write "0" in column 3. ** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 20, enter "20". *** If the "Highest Number Previously Paid For" IN THIS SPACE is less than 3, enter "3". The "Highest Number Previously Paid For" (Total or Independent) is the highest number found in the appropriate box in column 1.										

Legal Instrument Examiner:
/AJAY R. DAVID/

This collection of information is required by 37 CFR 1.16. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	5923.0001	2438

86625	75941	04/06/2011
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Brennan, Manna & Diamond, LLC
 The Carnegie Building
 75 East Market Street
 Akron, OH 44308

EXAMINER	
NORDMEYER, PATRICIA L	

ART UNIT	PAPER NUMBER
1788	

NOTIFICATION DATE	DELIVERY MODE
04/06/2011	ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@bmdllc.com
 wsharders@bmdllc.com
 jaruller@bmdllc.com

Office Action Summary

Application No.

10/674,108

Applicant(s)

GOECKE, THOMAS R.

Examiner

PATRICIA L. NORDMEYER

Art Unit

1788

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 February 2011.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 and 9-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 and 9-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

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DETAILED ACTION

Repeated Rejections

1. The 35 U.S.C. 102(b) of claim 12 as being anticipated by DeRusha et al. (USPN 4,484,574) in the office action dated August 23, 2010 is repeated as Applicant's arguments in the response dated February 23, 2011 are found to be unpersuasive. The rejection is repeated below for Applicant's convenience.

DeRusha et al. discloses an adhesive tape (Abstract) comprising: a polymer layer having a thickness between 0.031" and 0.236" (Column 2, lines 14 – 23), the polymer layer defining a first side (Figure 1, #16); and a double sided adhesive layer where one side of the double sided adhesive layer¹ is in substantially continuous contact with the first side of the polymer layer (Figure 1, #12) and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment (Column 3, lines 28 – 52; Figure 1, #12, wherein the adhesive can attach to any substrate surface, Column 5, lines 1 - 5); where the adhesive tape has a peel adhesion of 250 g/cm to 850 g/cm width, which meets the limitation of a peel adhesion greater than 2.0 lb/in width (2.0 lb/in width converts to 357 g/cm width) (Column 3, lines 41 – 52) as in claim 12.

As to the limitation of "adhesive layer is disposed to adhere to the flooring environment", the term disposed, as defined by Merriam-Webster's, means "to give a tendency

¹ The Examiner notes that any layer of adhesive has two sides, each side having adhesive properties. Therefore, the reference's disclosure of a layer of adhesive anticipates the claim limitation of a double sided adhesive layer.

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to". Since the adhesive tape of DeRusha et al. meets the claim limitations, it would be capable of, or disposed to, adhere to a flooring environment.

2. The 35 U.S.C. 103(a) of claims 1 - 3, 5, 7, 9 and 10 over Jonhston et al. (USPN 3,895,153) in the office action dated August 23, 2010 is repeated as Applicant's arguments in the response dated February 23, 2011 are found to be unpersuasive. The rejection is repeated below for Applicant's convenience.

As to claim 1, Johnston et al. discloses an adhesive article that can be formed into any shape, (Abstract; Column 8, lines 16 - 20) comprising a polymer layer having a Shore A Hardness of between about 60 and 95 (Figure 4, #18; Column 4, lines 51 - 55) and a substantially uniform thickness of 10 to 60 mils or 0.010" to 0.060" (Figure 4, #18; Column 5, lines 48 - 52); and a layer of adhesive attached to said polymer layer (Figure 6, #38).

Johnston et al. differs from claim 1 in two ways. First, Johnston et al. fails to disclose an anticipatory example, or ranges that are sufficiently specific to anticipate the ranges of Shore A Hardness, polymer layer thickness (claim 1). However, Johnson et al. teaches a range of Shore A Hardness of between about 60 and 95 (Column 4, lines 51-55) which overlaps the claim 1 range of between about 92 and 100. Johnston et al. teaches a polymer layer thickness of 0.010 to 0.060" which overlaps the claim 1 range of between about 0.020 and 0.065". Overlapping ranges have been held to establish prima facie obviousness. See MPEP 2144.05.

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Therefore, it would have been obvious to one of ordinary skill in the art to have selected from the overlapping portion of the ranges of Shore A Hardness and thickness taught by Johnston et al. because overlapping ranges have been held to establish prima facie obviousness.

Second, Johnson et al. fail to specifically refer to its article as being an “adhesive tape.” Johnston et al. teaches that the article can be formed into any shape, (Abstract; Column 8, lines 16 - 20). The term “tape,” as defined by Merriam-Webster’s, means “a narrow flexible strip or band.” And, it is well settled that a particular shape of a prior invention carries no patentable weight unless the applicant can demonstrate that the new shape provides significant unforeseen improvements to the invention. In the instant case, the application does not indicate any new, significant attributes of the invention due to its shape which would have been unforeseen to one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to change the shape to change the shape of the adhesive article to be in the form of a narrow strip or band. One skilled in the art would have been motivated to do so in order to change the appearance of the adhesive article. MPEP 2144.04 IV.

With regard to claim 2, the article contains a substrate attached to an outermost side of said layer of adhesive (Figure 6, # 39).

For claim 3, the polymer layer includes a textured surface (Figure 4, #18).

Regarding claim 5, the polymer layer includes coloring pigment (Column 5, lines 38 – 48).

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As in claim 7, the adhesive comprises a rubberized double-sided tape (Column 3, lines 43 – 49, since the adhesive has adhesive qualities on the opposite sides of the layer, it reads upon a double side adhesive product).

With regard to claim 9, polymer layer has a Shore A Hardness of between about 60 and 95, thereby meeting the limitation of a Shore A Hardness of 93 and 97 (Column 4, lines 51 – 55).

For claim 10, the adhesive is pressure sensitive (Column 5, lines 67 – 69).

3. The 35 U.S.C. 103(a) of claim 12 over Hornibrook et al. (USPN 4,248,762) in the office action dated August 23, 2010 is repeated as Applicant's arguments in the response dated February 23, 2011 are found to be unpersuasive. The rejection is repeated below for Applicant's convenience.

Hornibrook et al. disclose a pressure sensitive product (Column 1, lines 10 – 13) comprising: a polymer layer having a thickness between 0.002" and 0.020", thereby overlapping the thickness limitation of 0.020" and 0.065" (Column 2, lines 1 – 15), the polymer layer defining a first side (Figure 1, #1); and a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer (Column 2, lines 16 – 39; Figure 2, #2) and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment (Column 2, lines 16 – 39; Figure 2, #2); where the adhesive tape has a peel adhesion of 7.5 pounds per linear inch, which meets the limitations of a peel adhesion greater than 2.0 lb/in width (Column 5, lines 1 – 3) as in claim 12.

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Hornibrook et al. differs from claim 12 in two ways. First, Hornibrook et al. fails to disclose an anticipatory example, or ranges that are sufficiently specific to anticipate the claim 12 range of thickness of 0.020 to 0.065". However, Hornibrook et al. teaches a range of thickness of 0.002" and 0.020" (Column 2, lines 1 – 15), which overlaps the claim 12 range of between 0.020 and 0.065". Overlapping ranges have been held to establish prima facie obviousness. See MPEP 2144.05.

Therefore, it would have been obvious to one of ordinary skill in the art to have selected from the overlapping portion of the ranges of Shore A Hardness taught by Reeves et al. because overlapping ranges have been held to establish prima facie obviousness.

Second, Hornibrook et al. fail to disclose that the adhesive article is specifically an adhesive tape.

The term tape, as defined by Merriam-Webster's, means "a narrow flexible strip or band". It is well settled that a particular shape of a prior invention carries no patentable weight unless the applicant can demonstrate that the new shape provides significant unforeseen improvements to the invention. In the instant case, the application does not indicate any new, significant attributes of the invention due to its shape which would have been unforeseen to one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to change the shape of the adhesive article to be in the form of a narrow strip or band. One skilled in the art would have been motivated to do so in order to change the appearance of the adhesive article. MPEP 2144.04 IV.

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As to the limitation of "adhesive layer is disposed to adhere to the flooring environment", the term disposed, as defined by Merriam-Webster's, means "to give a tendency to". Since the adhesive product of Hornibrook et al. meets the claim limitations, it would be capable of, or disposed to, adhere to a flooring environment.

Withdrawn Rejections

4. Any rejections and or objections, made in the previous Office Action, and not repeated above, are hereby withdrawn due to Applicant's arguments in the response dated February 23, 2011.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 – 6, 9 - 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Reeves et al. (USPN 5,508,084) in view of Goswami et al. (USPN 4,343,856).

As to claim 1, Reeves et al. discloses a repositionable article that can be cut into any shape, (Column 7, lines 34 – 36) comprising a polymer layer (Figure 2d, #19; Column 10, lines 21 – 29) having a Shore A Hardness of between about 70 and 140 (Column 14, lines 25 – 29) and a substantially uniform thickness of between about 0.020" to 0.065" (Column 10, lines 30 –

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35) and a layer of adhesive attached to said polymer layer (Figure 2d, #13; Column 12, lines 30 – 44).

As to claim 11, Reeves et al. also a repositionable article that can be cut into any shape, (Column 7, lines 34 – 36) comprising: a polymer layer having a Shore A Hardness of between about 70 and 140 (Column 14, lines 25 – 29); and a layer of pressure sensitive adhesive comprising a first side and an opposed second side (Column 16, lines 43 - 54), the first side being in direct and uninterrupted contact with the polymer layer (Figure 2d) where the adhesive tape comprises an average thickness between 3 and 350 mils, since the backing sheet has a thickness of 2 to 100 mils (Column 4, lines 29 – 31) in combination with the adhesive layer having a thickness of 1 to 250 mils (Column 11, lines 4 - 16).

Reeves et al. differs from claims 1 and 11 in two ways. First, Reeves et al. fails to disclose an anticipatory example, or ranges that are sufficiently specific to anticipate the claim 1 range of Shore A Hardness and or overall tape thickness (claim 11). However, Reeves et al. teaches polyvinyl chloride layer (Column 14, lines 10 - 12) having a range of Shore A Hardness of between about 70 and 140 (Column 14, lines 25 – 29) which overlaps the claim 1 range. Goswami et al. teach that a polyvinyl chloride layer has a Shore A Hardness of 80 to 95 (Column 2, lines 3 - 21), which overlaps the claim 1 range. Reeves et al teaches a film thickness of 2 mils to 100 mils (Column 10, lines 31 - 35), wherein the adhesive contains microspheres with diameters of 1 to 250 micrometers which protrude from the adhesive layer (Column 11, lines 4 - 16), which would overlap the range of 65 to 69 mils. Overlapping ranges have been held to establish prima facie obviousness. See MPEP 2144.05.

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Therefore, it would have been obvious to one of ordinary skill in the art to have selected from the overlapping portion of the ranges of Shore A Hardness taught by Reeves et al. and shown by Goswami et al. because overlapping ranges have been held to establish prima facie obviousness.

Second, Reeves et al. fails to specifically refer to its article as being an “adhesive tape.” Reeves et al. teaches that the article can be formed into any shape, (Column 7, lines 34 – 36). The term “tape,” as defined by Merriam-Webster’s, means “a narrow flexible strip or band.” It is well settled that a particular shape of a prior invention carries no patentable weight unless the applicant can demonstrate that the new shape provides significant unforeseen improvements to the invention. In the instant case, the application does not indicate any new, significant attributes of the invention due to its shape which would have been unforeseen to one of ordinary skill in the art.

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to change the shape to change the shape of the adhesive article to be in the form of a narrow strip or band. One skilled in the art would have been motivated to do so in order to change the appearance of the adhesive article. MPEP 2144.04 IV.

With regard to claim 2, the article contains a substrate attached to an outermost side of said layer of adhesive (Column 13, lines 10 – 15).

For claim 3, the polymer layer includes a textured surface (Figure 2d; Column 12, lines 16 - 23).

With regard to claim 4, the polymer layer is comprised of a polyvinyl chloride (Column 13, lines 28 – 36).

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Regarding claim 5, the polymer layer includes coloring pigment (Column 12, lines 25 – 31).

As in claim 6, the polyvinyl chloride comprises a clear polymer (Column 12, lines 25 – 31).

With regard to claim 9, polymer layer has a Shore A Hardness of between about 70 and 140, which overlaps the limitation of a Shore A Hardness of 93 and 97 (Column 14, lines 25 – 29).

For claim 10, the adhesive is pressure sensitive (Column 8, lines 9 – 13). However, Reeves et al. fail to disclose that the adhesive article is specifically an adhesive tape.

7. Claim 13 is rejected under 35 U.S.C. 103(a) as being unpatentable over Hornibrook et al. (USPN 4,248,762).

Hornibrook et al. disclose a pressure sensitive product (Column 1, lines 10 – 13) comprising: a polymer layer having a thickness between 0.002" and 0.020", thereby overlapping the thickness limitation of 0.020" and 0.065" (Column 2, lines 1 – 15), the polymer layer defining a first side (Figure 1, #1); and a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer (Column 2, lines 16 – 39; Figure 2, #2) and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment (Column 2, lines 16 – 39; Figure 2, #2); where the adhesive tape has a peel adhesion of 7.5 pounds per linear inch, which meets the limitations of a peel adhesion greater than 2.0 lb/in width (Column 5, lines 1 – 3). However,

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Hornibrook et al. fail to disclose the peel adhesion is measured under a test method including peeling the tape at a 90 degree angle after application to a stainless steel panel.

With regard to the limitation of disclose the peel adhesion is measured under a test method including peeling the tape at a 90 degree angle after application to a stainless steel panel, Hornibrook et al. disclose where the adhesive tape has a peel adhesion of 7.5 pounds per linear inch, which meets the limitations of a peel adhesion greater than 2.0 lb/in width (Column 5, lines 1 – 3). Since Hornibrook et al. disclose the adhesive product made of the desired materials with the specific dimensions, it would be obvious to one having ordinary skill in the art that the adhesive product would meet the peel adhesion when peeling the tape at a 90 degree angle after application to a stainless steel panel.

8. Claim 14 is rejected under 35 U.S.C. 103(a) as being unpatentable over Johnston et al. (USPN 3,895,153).

Johnston et al. discloses an adhesive article that can be formed into any shape, (Abstract; Column 8, lines 16 - 20) comprising a polymer layer having a Shore A Hardness of between about 60 and 95 (Figure 4, #18; Column 4, lines 51 – 55) and a substantially uniform thickness of 10 to 60 mils or 0.010" to 0.060" (Figure 4, #18; Column 5, lines 48 – 52); and a layer of adhesive attached to said polymer layer (Figure 6, #38). However, Johnston et al. fail to disclose the adhesive tape comprises a peel adhesion greater than 2.0 lb/in width when peeled at a 90

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degree angle under a modified PSTC-101 method where the modified PSTC'101 method comprises a dwell time of one hour.

With regard to the limitation of disclose the peel adhesion is measured under a test method including peeling the tape at a 90 degree angle after application to a stainless steel panel, Johnston et al. disclose the adhesive product made of the desired materials with the specific dimensions, it would be obvious to one having ordinary skill in the art that the adhesive product would meet the peel adhesion when peeling the tape at a 90 degree angle after application to a stainless steel panel.

Declaration under 37 C.F.R. 1.132

9. The declaration under 37 CFR 1.132 filed February 23, 2011 is insufficient to overcome the rejection of claims 1 - 7 and 9 - 12 based upon the 102(b) and 103(a) rejections as set forth in the last Office action because: The applicant has provided no clear evidence that the references are obvious rejections over the claimed invention.

10. In view of the foregoing, when all of the evidence is considered, the totality of the rebuttal evidence of nonobviousness fails to outweigh the evidence of obviousness.

Response to Arguments

11. Applicant's arguments filed February 23, 2011 have been fully considered but they are not persuasive.

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Applicant's arguments with regard to the 112 1st and 2nd paragraph are moot since the rejections have been withdrawn.

With regard to Applicant's arguments that DeRusha fails to disclose its tape on "a flooring environment", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The structure of DeRusha is capable of adhering to a floor, thereby meeting the claimed limitation.

With regard to Applicant's argument that Johnston et al. fail to disclose the adhesive layer attached to the polymer layer with regard to claim 1, the claim language does not state that the adhesive layer has to be in direct contact with the polymer layer with no layers in between the polymer and adhesive. The open language of the claim, i.e. comprising, allows for layers to be in between the adhesive and the polymer layer. Therefore, Johnston et al. discloses the claimed adhesive tape.

With regard to Applicant's argument that Johnston et al. fail to disclose the pressure sensitive adhesive being in direct and uninterrupted contact with the polymer layer, please see the new rejection in view of Reeves et al.

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With regard to Reeves failing to disclose the Shore A hardness range, please see the new rejection of Reeves in view of Goswami et al.

With regard to Applicant's arguments that Hornibrook fails to disclose its tape on "a flooring environment", a recitation of the intended use of the claimed invention must result in a structural difference between the claimed invention and the prior art in order to patentably distinguish the claimed invention from the prior art. If the prior art structure is capable of performing the intended use, then it meets the claim. The structure of Hornibrook is capable of adhering to a floor, thereby meeting the claimed limitation.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICIA L. NORDMEYER whose telephone number is (571)272-1496. The examiner can normally be reached on Mon.-Fri. from 10:00-6:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alicia Chevalier can be reached on (571) 272-1490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Application/Control Number: 10/674,108

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Patricia L. Nordmeyer
Primary Examiner
Art Unit 1788

/Patricia L. Nordmeyer/
Primary Examiner, Art Unit 1788

Notice of References Cited	Application/Control No. 10/674,108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.	
	Examiner PATRICIA L. NORDMEYER	Art Unit 1788	Page 1 of 1

U.S. PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Name	Classification
*	A	US-4,343,856	08-1982	Goswami et al.	428/332
	B	US-			
	C	US-			
	D	US-			
	E	US-			
	F	US-			
	G	US-			
	H	US-			
	I	US-			
	J	US-			
	K	US-			
	L	US-			
	M	US-			


FOREIGN PATENT DOCUMENTS

*		Document Number Country Code-Number-Kind Code	Date MM-YYYY	Country	Name	Classification
	N					
	O					
	P					
	Q					
	R					
	S					
	T					

NON-PATENT DOCUMENTS

*		Include as applicable: Author, Title Date, Publisher, Edition or Volume, Pertinent Pages)
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	X	

*A copy of this reference is not being furnished with this Office action. (See MPEP § 707.05(a).)
Dates in MM-YYYY format are publication dates. Classifications may be US or foreign.


Search Notes 	Application/Control No. 10674108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.
	Examiner Patricia L Nordmeyer	Art Unit 1783

SEARCHED			
Class	Subclass	Date	Examiner
428	40.1, 40.8, 41.6, 42.1, 141, 174, 332, 337, 343, 906	7/22/10	pln

SEARCH NOTES		
Search Notes	Date	Examiner
Inventor search	7/22/10	pln
East word and class search	7/22/10	pln
Updated East word and class search	3/25/11	pln

INTERFERENCE SEARCH			
Class	Subclass	Date	Examiner

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<i>Index of Claims</i> 	Application/Control No. 10674108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.
	Examiner Patricia L Nordmeyer	Art Unit 1783

✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant				<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
CLAIM		DATE							
Final	Original	07/27/2010	03/29/2011						
	1	✓	✓						
	2	✓	✓						
	3	✓	✓						
	4	✓	✓						
	5	✓	✓						
	6	✓	✓						
	7	✓	✓						
	8	-	-						
	9	✓	✓						
	10	✓	✓						
	11	✓	✓						
	12	✓	✓						
	13		✓						
	14		✓						

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	2	((THOMAS) near2 (GOECKE)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/22 15:14
S2	14	("5061559" "5246773" "5496636" "6036997" "6245382" "6277468" "6509084").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:20
S3	17285	(428/40.1,40.8,41.6,42.1,141,174,332,337,343,906).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:30
S5	342	S3 and (shore with hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:37
S6	248	S3 and (shore with a with hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:37
S7	175	S6 and adhesive\$1 and thick\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:38
S8	1299	adhesive\$1 and tape\$1 and (shore adj a adj hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 16:40

S9	1142	S8 and thick\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 16:41
S10	100	adhesive\$1 and (tape\$1 same (shore adj a adj hardness))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 16:45
S11	0	tape\$1.clms.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:23
S12	0	tape\$1.clms.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:23
S13	625	(adhesive\$1 with tape\$1) and (shore adj a adj hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:25
S14	15477	floor same tape\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:26
S15	40	S14 and adhesive\$1 and (shore adj a adj hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:27
S16	2	("6668501").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:39

S17	2	("6668504").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:40
S18	1004	adhesive\$1 and (polymer\$1 same (shore adj a adj hardness))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 11:17
S19	2	("6726971").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 15:25
S20	4000	(peel with adhesion) and adhesive\$1 and thick\$4 and tape\$1 and polymer\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 17:03
S22	1777	((peel with adhesion) same tape\$1) and adhesive\$1 and thick\$4 and polymer\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 17:04
S23	14	((("5686170") or ("6440538") or ("5839977") or ("2559990") or ("6668501") or ("6461715")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/28 22:39
S24	17918	(428/40.1,40.8,41.6,42.1,141,174,332,337,343,906).OCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/03/25 14:47
S25	357	S24 and ((shore or shore\$1a) with hardness\$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/03/25 14:49

S26	357	S24 and ((shore or shore\$1a or (shore adj a)) with hardness\$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/03/25 14:50
S27	0	S26 and adhesive41	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/03/25 15:20
S28	272	S26 and adhesive\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/03/25 15:20

EAST Search History (Interference)

< This search history is empty >

3/29/11 5:44:28 PM

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To: patents@bmdllc.com, wsharders@bmdllc.com, jaruller@bmdllc.com
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Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 86625

Apr 06, 2011 05:38:41 AM

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Application	Document	Mailroom Date	Attorney Docket No.
10674108	CTNF	04/06/2011	5923.0001
	892	04/06/2011	5923.0001

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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	5923.0001	2438

86625 7500 05/10/2011
Brennan, Manna & Diamond, LLC
The Carnegie Building
75 East Market Street
Akron, OH 44308

EXAMINER

NORDMEYER, PATRICIA L

ART UNIT	PAPER NUMBER
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1788

NOTIFICATION DATE	DELIVERY MODE
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05/10/2011

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patents@bmdllc.com
wsharders@bmdllc.com
jaruller@bmdllc.com

Interview Summary	Application No.	Applicant(s)	
	10/674,108	GOECKE, THOMAS R.	
	Examiner	Art Unit	
	PATRICIA L. NORDMEYER	1788	

All participants (applicant, applicant's representative, PTO personnel):

(1) PATRICIA L. NORDMEYER. (3) _____.

(2) W. Scott Harders. (4) _____.

Date of Interview: 04 May 2011.

Type: a) ☒ Telephonic b) ☐ Video Conference
c) ☐ Personal [copy given to: 1) ☐ applicant 2) ☐ applicant's representative]

Exhibit shown or demonstration conducted: d) ☐ Yes e) ☐ No.

If Yes, brief description: _____.

Claim(s) discussed: 13 and 14.

Identification of prior art discussed: Hornibrook et al. and Johnston et al.

Agreement with respect to the claims f) ☐ was reached. g) ☒ was not reached. h) ☐ N/A.

Substance of Interview including description of the general nature of what was agreed to if an agreement was reached, or any other comments: Mr. Harders and the Examiner discussed claims 13 and 14 with regard to the obviousness rejection of the testing methods being claimed.

(A fuller description, if necessary, and a copy of the amendments which the examiner agreed would render the claims allowable, if available, must be attached. Also, where no copy of the amendments that would render the claims allowable is available, a summary thereof must be attached.)

THE FORMAL WRITTEN REPLY TO THE LAST OFFICE ACTION MUST INCLUDE THE SUBSTANCE OF THE INTERVIEW. (See MPEP Section 713.04). If a reply to the last Office action has already been filed, APPLICANT IS GIVEN A NON-EXTENDABLE PERIOD OF THE LONGER OF ONE MONTH OR THIRTY DAYS FROM THIS INTERVIEW DATE, OR THE MAILING DATE OF THIS INTERVIEW SUMMARY FORM, WHICHEVER IS LATER, TO FILE A STATEMENT OF THE SUBSTANCE OF THE INTERVIEW. See Summary of Record of Interview requirements on reverse side or on attached sheet.

/Patricia L. Nordmeyer/
Primary Examiner, Art Unit 1788

Manual of Patent Examining Procedure (MPEP), Section 713.04, Substance of Interview Must be Made of Record

A complete written statement as to the substance of any face-to-face, video conference, or telephone interview with regard to an application must be made of record in the application whether or not an agreement with the examiner was reached at the interview.

**Title 37 Code of Federal Regulations (CFR) § 1.133 Interviews
Paragraph (b)**

In every instance where reconsideration is requested in view of an interview with an examiner, a complete written statement of the reasons presented at the interview as warranting favorable action must be filed by the applicant. An interview does not remove the necessity for reply to Office action as specified in §§ 1.111, 1.135. (35 U.S.C. 132)

37 CFR §1.2 Business to be transacted in writing.

All business with the Patent or Trademark Office should be transacted in writing. The personal attendance of applicants or their attorneys or agents at the Patent and Trademark Office is unnecessary. The action of the Patent and Trademark Office will be based exclusively on the written record in the Office. No attention will be paid to any alleged oral promise, stipulation, or understanding in relation to which there is disagreement or doubt.

The action of the Patent and Trademark Office cannot be based exclusively on the written record in the Office if that record is itself incomplete through the failure to record the substance of interviews.

It is the responsibility of the applicant or the attorney or agent to make the substance of an interview of record in the application file, unless the examiner indicates he or she will do so. It is the examiner's responsibility to see that such a record is made and to correct material inaccuracies which bear directly on the question of patentability.

Examiners must complete an Interview Summary Form for each interview held where a matter of substance has been discussed during the interview by checking the appropriate boxes and filling in the blanks. Discussions regarding only procedural matters, directed solely to restriction requirements for which interview recordation is otherwise provided for in Section 812.01 of the Manual of Patent Examining Procedure, or pointing out typographical errors or unreadable script in Office actions or the like, are excluded from the interview recordation procedures below. Where the substance of an interview is completely recorded in an Examiners Amendment, no separate Interview Summary Record is required.

The Interview Summary Form shall be given an appropriate Paper No., placed in the right hand portion of the file, and listed on the "Contents" section of the file wrapper. In a personal interview, a duplicate of the Form is given to the applicant (or attorney or agent) at the conclusion of the interview. In the case of a telephone or video-conference interview, the copy is mailed to the applicant's correspondence address either with or prior to the next official communication. If additional correspondence from the examiner is not likely before an allowance or if other circumstances dictate, the Form should be mailed promptly after the interview rather than with the next official communication.

The Form provides for recordation of the following information:

- Application Number (Series Code and Serial Number)
- Name of applicant
- Name of examiner
- Date of interview
- Type of interview (telephonic, video-conference, or personal)
- Name of participant(s) (applicant, attorney or agent, examiner, other PTO personnel, etc.)
- An indication whether or not an exhibit was shown or a demonstration conducted
- An identification of the specific prior art discussed
- An indication whether an agreement was reached and if so, a description of the general nature of the agreement (may be by attachment of a copy of amendments or claims agreed as being allowable). Note: Agreement as to allowability is tentative and does not restrict further action by the examiner to the contrary.
- The signature of the examiner who conducted the interview (if Form is not an attachment to a signed Office action)

It is desirable that the examiner orally remind the applicant of his or her obligation to record the substance of the interview of each case. It should be noted, however, that the Interview Summary Form will not normally be considered a complete and proper recordation of the interview unless it includes, or is supplemented by the applicant or the examiner to include, all of the applicable items required below concerning the substance of the interview.

A complete and proper recordation of the substance of any interview should include at least the following applicable items:

- 1) A brief description of the nature of any exhibit shown or any demonstration conducted,
- 2) an identification of the claims discussed,
- 3) an identification of the specific prior art discussed,
- 4) an identification of the principal proposed amendments of a substantive nature discussed, unless these are already described on the Interview Summary Form completed by the Examiner,
- 5) a brief identification of the general thrust of the principal arguments presented to the examiner,
(The identification of arguments need not be lengthy or elaborate. A verbatim or highly detailed description of the arguments is not required. The identification of the arguments is sufficient if the general nature or thrust of the principal arguments made to the examiner can be understood in the context of the application file. Of course, the applicant may desire to emphasize and fully describe those arguments which he or she feels were or might be persuasive to the examiner.)
- 6) a general indication of any other pertinent matters discussed, and
- 7) if appropriate, the general results or outcome of the interview unless already described in the Interview Summary Form completed by the examiner.

Examiners are expected to carefully review the applicant's record of the substance of an interview. If the record is not complete and accurate, the examiner will give the applicant an extendable one month time period to correct the record.

Examiner to Check for Accuracy

If the claims are allowable for other reasons of record, the examiner should send a letter setting forth the examiner's version of the statement attributed to him or her. If the record is complete and accurate, the examiner should place the indication, "Interview Record OK" on the paper recording the substance of the interview along with the date and the examiner's initials.

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Application	Document	Mailroom Date	Attorney Docket No.
10674108	EXIN	05/10/2011	5923.0001

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Doc description: Information Disclosure Statement (IDS) Filed

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PTO/SB/08a (01-10)

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT

(Not for submission under 37 CFR 1.99)

Application Number	10674108
Filing Date	2003-09-23
First Named Inventor	Goecke
Art Unit	1788
Examiner Name	Nordmeyer
Attorney Docket Number	5923.0001

U.S.PATENTS

Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear
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Examiner Initials*	Cite No	Include name of the author (in CAPITAL LETTERS), title of the article (when appropriate), title of the item (book, magazine, journal, serial, symposium, catalog, etc), date, pages(s), volume-issue number(s), publisher, city and/or country where published.	T ⁵

Receipt date: 10/06/2011

10674108 GAU: 1788

**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	10674108
Filing Date	2003-09-23
First Named Inventor	Goecke
Art Unit	1788
Examiner Name	Nordmeyer
Attorney Docket Number	5923.0001

1	Handbook of Pressure Sensitive Adhesive Technology, 3d Edition, Satas & Associates, 1999, Chapter 5 - Peel Adhesion, page 79.	<input type="checkbox"/>
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EXAMINER SIGNATURE

Examiner Signature	/Patricia L. Nordmeyer/	Date Considered	11/08/2011
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*EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through a citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

¹ See Kind Codes of USPTO Patent Documents at www.USPTO.GOV or MPEP 901.04. ² Enter office that issued the document, by the two-letter code (WIPO Standard ST.3). ³ For Japanese patent documents, the indication of the year of the reign of the Emperor must precede the serial number of the patent document. ⁴ Kind of document by the appropriate symbols as indicated on the document under WIPO Standard ST.16 if possible. ⁵ Applicant is to place a check mark here if English language translation is attached.

EAST Search History

EAST Search History (Prior Art)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	2	((THOMAS) near2 (GOECKE)).INV.	US-PGPUB; USPAT; USOCR	OR	OFF	2010/07/22 15:14
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S3	17285	(428/40.1,40.8,41.6,42.1,141,174,332,337,343,906).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:30
S5	342	S3 and (shore with hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:37
S6	248	S3 and (shore with a with hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:37
S7	175	S6 and adhesive\$1 and thick\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 15:38
S8	1299	adhesive\$1 and tape\$1 and (shore adj a adj hardness)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 16:40

S9	1142	S8 and thick\$4	US-PGPUB; USPAT; USOCR, EPO; JPO; DERWENT	OR	OFF	2010/07/22 16:41
S10	100	adhesive\$1 and (tape\$1 same (shore adj a adj hardness))	US-PGPUB; USPAT; USOCR, EPO; JPO; DERWENT	OR	OFF	2010/07/22 16:45
S11	0	tape\$1.clms.	US-PGPUB; USPAT; USOCR, EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:23
S12	0	tape\$1.clms.	US-PGPUB; USPAT; USOCR, EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:23
S13	625	(adhesive\$1 with tape\$1) and (shore adj a adj hardness)	US-PGPUB; USPAT; USOCR, EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:25
S14	15477	floor same tape\$1	US-PGPUB; USPAT; USOCR, EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:26
S15	40	S14 and adhesive\$1 and (shore adj a adj hardness)	US-PGPUB; USPAT; USOCR, EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:27
S16	2	("6668501").PN.	US-PGPUB; USPAT; USOCR, EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:39

S17	2	("6668504").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/22 17:40
S18	1004	adhesive\$1 and (polymer\$1 same (shore adj a adj hardness))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 11:17
S19	2	("6726971").PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 15:25
S20	4000	((peel with adhesion) and adhesive\$1 and thick\$4 and tape\$1 and polymer\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 17:03
S22	1777	((peel with adhesion) same tape\$1) and adhesive\$1 and thick\$4 and polymer\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/26 17:04
S23	14	((("5686170") or ("6440538") or ("5839977") or ("2559990") or ("6668501") or ("6461715")).PN.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2010/07/28 22:39
S24	17918	(428/40.1,40.8,41.6,42.1,141,174,332,337,343,906).CCLS.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/03/25 14:47
S25	357	S24 and ((shore or shore\$1a) with hardness\$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/03/25 14:49

S26	357	S24 and ((shore or shore\$1a or (shore adj a)) with hardness\$2)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/03/25 14:50
S27	0	S26 and adhesive41	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/03/25 15:20
S28	272	S26 and adhesive\$1	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/03/25 15:20
S29	24921	shore with a with hardness	US-PGPUB; USPAT; USOCR	OR	OFF	2011/11/07 17:13
S30	1077	(shore with a with hardness) and thick\$4 and (psa\$1 or (pressure adj sensitive adj adhesive\$1) or (pressure\$1sensitive adj adhesive\$1))	US-PGPUB; USPAT; USOCR	OR	OFF	2011/11/07 17:14
S31	533	S30 and tape	US-PGPUB; USPAT; USOCR	OR	OFF	2011/11/07 17:15
S32	579	S30 and (tape or tapes)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/11/07 17:15
S33	2084	(shore with a with hardness) and thick\$4 and adhesive\$1 and (tape or tapes)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/11/07 17:16
S34	1662	S33 and polymer\$1	US-PGPUB; USPAT; USOCR	OR	OFF	2011/11/07 17:16
S35	626	S34 and (peel or peeled)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/11/07 18:18
S36	352	S35 not S32	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT	OR	OFF	2011/11/07 18:19

S37	626	(shore with a with hardness) and thick\$4 and adhesive\$1 and (tape or tapes) and polymer\$1 and (peel or peeled)	US-PGPUB; USPAT; USOCR	OR	OFF	2011/11/08 12:48
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EAST Search History (Interference)

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S38	26	(428/40.1,40.8,41.6,42.1,141,174,332,337,343,906).CCLS.	UPAD	OR	OFF	2011/11/08 12:47
S40	337	(shore with a with hardness) and thick\$4 and adhesive\$1 and (tape or tapes) and polymer\$1 and (peel or peeled)	USPAT; UPAD	OR	OFF	2011/11/08 12:49

11/8/11 4:40:36 PM

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To: patents@bmdllc.com, wsharders@bmdllc.com, jaruller@bmdllc.com
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 86625

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Application	Document	Mailroom Date	Attorney Docket No.
10674108	NOA	11/17/2011	5923.0010
	NOA	11/17/2011	5923.0010
	1449	11/17/2011	5923.0010

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UNITED STATES PATENT AND TRADEMARK OFFICE
PATENT APPLICATION INFORMATION RETRIEVAL SYSTEM

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Thomas R. Goecke Examiner : Patricia L. Nordmeyer

Application No. : 10/674,108 Group Art : 1783

Filing Date : 29 September 2003 Docket No. : 5923.0001

Confirmation No. : 2438

Title: Adhesive Tape

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

AMENDMENT D AND RESPONSE TO OFFICE ACTION

Dear Examiner:

This is in response to the Office Action dated April 6, 2011, issued in connection with the above-referenced application (hereafter "Office Action"). The Office Action set a three-month statutory period to respond. This Response to Office Action, electronically filed via the EFS system on October 6, 2011 with a request for three-month extension and certificate of transmission, is thus, timely filed.

Our Docket No.: 5923.0001
Serial No.: 10/674,108

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IN THE CLAIMS:

1. (currently amended) An adhesive tape comprising:

a polymer layer having a Shore A Hardness of between 92 and 100 and a substantially uniform thickness of between about 0.020" to 0.065"; and

a layer of adhesive attached to said polymer layer;

where the adhesive tape comprises a peel adhesion greater than 2.0 lb/in width when peeled at a 90 degree angle under a modified PSTC-101 method where the modified PSTC-101 method comprises a dwell time of one hour.

2. (Previously presented) The adhesive tape of claim 1, further comprising a substrate attached to an outermost side of said layer of adhesive.

3. (original) The adhesive tape claim of claim 1, wherein said polymer layer includes a textured surface.

4. (original) The adhesive tape of claim 1, wherein said polymer layer is comprised of a polyvinyl chloride.

5. (original) The adhesive tape of claim 1, wherein said polymer layer includes coloring pigment.

6. (original) The adhesive tape of claim 4, wherein said polyvinyl chloride comprises a clear polymer.

7. (Previously presented) The adhesive tape of claim 1, wherein said adhesive comprises a rubberized double-sided tape.

8. (cancelled)

9. (Previously presented) The adhesive tape of claim 1, the adhesive tape claim of claim 1, wherein said polymer layer has a Shore A Hardness of between about 93 and 97.

10. (original) The adhesive tape of claim 1, wherein said adhesive is pressure sensitive.

11. (Previously presented) An adhesive tape comprising:

a polymer having a Shore A Hardness of between 92 and 100; and

a layer of pressure sensitive adhesive comprising a first side and an opposed second side, the first side being in direct and uninterrupted contact with the polymer layer where the adhesive tape comprises an average thickness between 65 mil and 69 mil.

12. (currently amended) An adhesive tape for application to a flooring environment comprising:

a polymer layer having a thickness between 0.020" and 0.065", the polymer layer defining a first side; and

a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment;

where the adhesive tape has a peel adhesion greater than 2.0 lb/in width, measured under a test method including peeling the tape at a 90 degree angle after application to a stainless steel panel.

13 - 14. (cancelled)

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15. (new) The adhesive tape as set forth in claim 12, wherein the test method further includes peeling the tape at a 90 degree angle after application to a stainless steel panel and allowing a dwell of one hour.

16. (new) The adhesive tape as set forth in claim 12, further comprising a substantially planar floor adhered to the adhesive on the opposing side, where the adhesive tape provides an aisle marking system.

REMARKS

Applicant wishes to thank the Examiner for the consideration given this case to date. Applicant has now had an opportunity to carefully consider the Examiner's action, and respectfully submits that the application, as amended, is now in condition for allowance. As examined, Claims 1-7 and 9-14 were pending. As amended, Claims 1-7 and 9-12, 15 and 16 are pending.

THE EXAMINER'S ACTION

In the Office Action, the Examiner:

1) rejected claim 12 under 35 U.S.C. § 102(b), as being anticipated by U.S. Patent No. 4,484,574 to DeRusha et. al. ("DeRusha");

2) rejected claims 1-3, 5, 7, 9, 10 and 14 under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 3,895,153 to Johnston et al. ("Johnston");

3) rejected claims 12 and 13 under 35 U.S.C. § 103(a), as being anticipated by U.S. Patent No. 4,248,762 to Hornibrook et al. ("Hornibrook");

4) rejected claims 1-6, and 9-11 under 35 U.S.C. § 103(a), as being unpatentable over U.S. Patent No. 5,508,084 to Reeves et al. ("Reeves") in view of U.S. Patent No. 4,343,856 to Goswami et al. ("Goswami").

REJECTIONS UNDER 35 U.S.C. § 102(b)

The Office maintains that DeRusha anticipates claim 12. Office Action, p. 2. However, with the amendments to claim 12 herein, substantially incorporating independent claim 13, the rejection is believed moot. Arguments directed at the combination will be addressed below in connection with the obviousness rejection of claim 13.

CLAIM REJECTIONS UNDER 35 U.S.C. § 103

The obviousness rejections are believed overcome by amendment or argument as more specifically outlined below under headings of the primary reference applied.

Johnston

The Office has maintained the rejections of claims 1-3, 5, 7, 9 and 10 and has rejected the newly added claim 14 under Johnston, Office Action, p. 3 and 11. The amendments above substantially incorporate the limitations of dependent claim 14 into claim 1.

"[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." In re Kahn, 441 F.3d 977, 988 (Fed. Cir. 2006), cited with approval in KSR, 550 U.S. at 418.

With respect to claim 1 now incorporating the limitations of claim 14, the Office concedes that Johnston fails to disclose a peel adhesion of greater than 2.0 lb/in under the PSTC-101 method as modified. To overcome the admitted failure in support of the obviousness rejection, the Office states in conclusory fashion that "it would be obvious to one having ordinary skill in the art that the adhesive product would meet the peel adhesion when peeling the tape at a 90 degree angle after application to a stainless steel panel." Office Action, p. 12.

In addition to the lack of articulated reasoning underpinning the obviousness rejection, the Office doesn't even acknowledge that Johnston is completely silent on peel adhesion values and test methodologies. Johnston includes no discussion of peel adhesion values, peel angles or dwell times - all of which can materially affect peel adhesion. Mauser Declaration filed with "Amendment C and Response to Office Action" on 23 February 2011 (hereafter, "Mauser Decl."), ¶ 23, 51, 55, 56.

Because a prima facie of obviousness has not been established for dependant claim 14, its incorporation into claim 1 is believed patentable over the references of record.

Hornibrook

The Office has maintained the rejections of claim 12 and has rejected the newly added claim 13 under Hornibrook, Office Action, p. 5 and 10. The

amendments above substantially incorporate the limitations of dependent claim 13 into independent claim 12.

With respect to claim 12, the Office asserts that Hornibrook teaches a thickness of 0.002 to 0.020 inches. Office Action, p. 10. The disclosed range is described generally at column 2, lines 1-15 (hereafter referred to as the "Column 2 Disclosure"). The Office also asserts that Hornibrook teaches a peel adhesion of 7.5 pounds per linear inch. Office Action, p. 10. The peel adhesion is said to be described at column 5, lines 1-3 (hereafter, the "Example 1 Disclosure").

Significantly, the Column 2 Disclosure cited to show the claimed range includes no description of peel adhesion. The Example 1 Disclosure cited to show the peel adhesion refers to a thickness well under the claimed range. Specifically, the Example 1 Disclosure teaches a 0.008 inch PVC film (column 4, line 33) and a 0.0012 inch adhesive (column 4, line 52). In other words, Hornibrook fails to teach the claimed combination of peel adhesion and thickness.

Regarding claim 12 as amended, the Office concedes that Hornibrook fails to disclose that the peel adhesion is measured under a test method including peeling the tape at a 90 degree angle after application to a stainless steel panel. Office Action, p. 11. To overcome the failure in support of the obviousness rejection, the Office notes that:

"Hornibrook et al. disclose[s] where the adhesive tape has a peel adhesion of 7.5 pounds per linear inch (the Example 1 Disclosure), which meets the limitations of a peel adhesion greater than 2.0 lb/in width []. Since Hornibrook et al. disclose the adhesive product made of the desired materials with the specific dimensions, it would be obvious to one having ordinary skill in the art that the adhesive product would meet the peel adhesion when peeling the tape at a 90 degree angle after application to a stainless steel panel."

Office Action, p. 11 (parenthetical and emphasis provided).

Notably, the support for the obviousness conclusion relies (incorrectly) on the improper "cherry-picking" disclosures from divergent parts of the Hornibrook description, namely the Example 1 Disclosure on the one hand and the "specific

dimensions" likely referring to the thickness range only taught in the Column 2 Disclosure on the other hand.

Hornibrook also describes a different test methodology. Specifically, Hornibrook in general, and the Example 1 Disclosure in particular describe a 180° peel angle and a 24 hour wetout or dwell. See, eg., Column 4, line 67 bridging to column 5, line 1; and Mausar Decl. ¶ 48-50. Differently, claim 12 calls for a 90° peel angle, and different peel angles result in different adhesion ratings. Mausar Decl. ¶ 23, 51. Indeed, Declarant Mausar states, "I do not believe that a skilled artisan would interpret the results of ... Hornibrook to be equivalent to the results of ... the applicant." Mausar Decl. ¶ 55.

For each of these reasons alone, and more powerfully combined, the fair teachings of Hornibrook provide no rational underpinning for the conclusion that the amended claim 12 is obvious in light of the prior art.

Reeves

The Office has rejected claims 1-6, 9-11 under Reeves in view of Goswami, Office Action, p. 7. As noted above, the amendments herein substantially incorporate the limitations of dependent claim 14 into independent claim 1 and thus, the rejection is believed moot as to claim 1 and dependant claims 2-6 and 9-10 for at least the reason that the Reeves combination was not applied to claim 14.

As to claim 11, the combination is improper. As set forth in "Amendment C and Response to Office Action" filed by applicant on 23 February 2011, the Reeves reference is not only inoperable in its teaching of Shore A hardness ranges, it is unintelligible. Mausar Decl. ¶ 46.

Because of this ambiguity of the entire range, the Reeves reference may not be used for any teaching, "overlapping" or otherwise, of hardness ranges, although it may be used for its other, enabled teachings. Beckman Instruments, Inc. v. LKB Produkter AB, 892 F.2d 1547, 1551 (Fed. Cir. 1989), citing, In re Pavne, 606 F.2d 303, 314, (CCPA 1979).

Our Docket No.: 5923.0001

Serial No.: 10/674,108

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Assuming for argument's sake, that Reeves is enabled and teaches a polyvinyl chloride layer (Office Action, p. 8 citing Column 14, lines 10-12) among other limitations, in order to remedy the defect in the Shore A ranges, the Office looks to Goswami.

The Office contends that Goswami teaches a polyvinyl chloride layer having a Shore A hardness of 80 to 95. Office Action, p. 8. However, a close reading of the cited passage reveals that Goswami does not describe such a polymer. Rather, Goswami desires such a vinyl film without describing how to achieve it. Specifically, the cited passage reads:

"The internally plasticized resin suitable for use in the present invention should have a Tg of from about - 10° C. to about 30° C. and should give a vinyl film having a Shore "A" Hardness of about 80 to about 95 when in the absence of functional additives and when no substantial amounts of plasticizer are present."
Goswami, Column 2, lines 15-20 (emphasis supplied).

Other passages and examples in Goswami are silent on the achieved Shore A hardness values obtained. Thus, the only mention of Shore values in Goswami, refers only to a hoped for feature with no information about how to achieve the result.

Both references, Reeves and Goswami, fail to teach or suggest the missing Shore A hardness teachings. For this reason alone, the rejection is improper for failing to establish a prima facie case of obviousness.

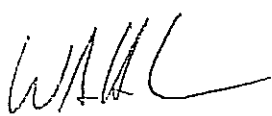
CONCLUSION

Applicant, intending to be completely responsive, believes that the amendments and remarks presented above resolve all outstanding issues on the above-referenced application. Accordingly, the application is believed to be in condition for allowance. Early notice thereof is earnestly solicited. While no additional fees are believed due, the Commissioner is hereby authorized to charge any necessary additional fees, or credit any overpayment, to Deposit Account No. 50-4883, referencing Attorney Docket No. 5923.0001.

Respectfully submitted,

Dated: 6 OCT 2011

By: _____



W. Scott Harders
Registration No. 42,629

Brennan, Manna & Diamond, LLC
75 East Market Street
Akron, OH 44308

Electronic Patent Application Fee Transmittal

Application Number:	10674108			
Filing Date:	29-Sep-2003			
Title of Invention:	ADHESIVE TAPE			
First Named Inventor/Applicant Name:	Thomas R. Goecke			
Filer:	Walter Scott Harders/Nancy Grams			
Attorney Docket Number:	5923.0010			
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Extension-of-Time:				
Extension - 3 months with \$0 paid	2253	1	635	635

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				635

Electronic Acknowledgement Receipt

EFS ID:	11129154
Application Number:	10674108
International Application Number:	
Confirmation Number:	2438
Title of Invention:	ADHESIVE TAPE
First Named Inventor/Applicant Name:	Thomas R. Goecke
Customer Number:	86625
Filer:	Walter Scott Harders/Nancy Grams
Filer Authorized By:	Walter Scott Harders
Attorney Docket Number:	5923.0010
Receipt Date:	06-OCT-2011
Filing Date:	29-SEP-2003
Time Stamp:	17:57:40
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	5635
RAM confirmation Number	4491
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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Doc code: IDS

Doc description: Information Disclosure Statement (IDS) Filed

PTO/SB/08b (01-10)

Approved for use through 07/31/2012, OMB 0651-0031

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INFORMATION DISCLOSURE STATEMENT BY APPLICANT (Not for submission under 37 CFR 1.99)	Application Number		10674108	
	Filing Date		2003-09-23	
	First Named Inventor	Goecke		
	Art Unit	1788		
	Examiner Name	Nordmeyer		
	Attorney Docket Number	5923.0001		

U.S. PATENTS								
Examiner Initial*	Cite No	Patent Number	Kind Code ¹	Issue Date	Name of Patentee or Applicant of cited Document	Pages, Columns, Lines where Relevant Passages or Relevant Figures Appear		
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	10674108
Filing Date	2003-09-23
First Named Inventor	Goecke
Art Unit	1788
Examiner Name	Nordmeyer
Attorney Docket Number	5923.0001

1	Handbook of Pressure Sensitive Adhesive Technology, 3d Edition, Satas & Associates, 1999, Chapter 5 - Peel Adhesion, page 79.	<input type="checkbox"/>
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If you wish to add additional non-patent literature document citation information please click the Add button

EXAMINER SIGNATURE

Examiner Signature		Date Considered	
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**INFORMATION DISCLOSURE
STATEMENT BY APPLICANT**
(Not for submission under 37 CFR 1.99)

Application Number	10674108
Filing Date	2003-09-23
First Named Inventor	Goecke
Art Unit	1788
Examiner Name	Nordmeyer
Attorney Docket Number	5923.0001

CERTIFICATION STATEMENT

Please see 37 CFR 1.97 and 1.98 to make the appropriate selection(s):

- ☐ That each item of information contained in the information disclosure statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(1).

OR

- ☐ That no item of information contained in the information disclosure statement was cited in a communication from a foreign patent office in a counterpart foreign application, and, to the knowledge of the person signing the certification after making reasonable inquiry, no item of information contained in the information disclosure statement was known to any individual designated in 37 CFR 1.56(c) more than three months prior to the filing of the information disclosure statement. See 37 CFR 1.97(e)(2).

- ☐ See attached certification statement.
- ☐ The fee set forth in 37 CFR 1.17 (p) has been submitted herewith.
- ☒ A certification statement is not submitted herewith.

SIGNATURE

A signature of the applicant or representative is required in accordance with CFR 1.33, 10.18. Please see CFR 1.4(d) for the form of the signature.

Signature	<i>W. S. Harders</i>	Date (YYYY-MM-DD)	10.15.2011
Name/Print	W. S. Harders	Registration Number	42629

This collection of information is required by 37 CFR 1.97 and 1.98. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1 hour to complete, including gathering, preparing and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

higher backing thickness, lagging decreased and $P \sim T^{2/3}$, where P is the peel force and T the thickness of the backing. In the region of truly elastic failure, $P \sim T^{1/2}$. The increase of P with T is ultimately limited by either the inadequacy of the adhesive bond, or, more commonly, by the ability of joint configuration to impose increasing moment arms as peel or cleavage begins.

EFFECT OF PEEL ANGLE

Peel test are carried out at either 180 or 90 degrees peel angle. The 90 degree peel test has some advantages: The standard deviation is lower than that for the 180 degree test, it provides a better understood geometry, the affect of the backing properties (thickness and stiffness) is less pronounced. This test is more difficult to carry out, because it requires special arrangement and fixtures to maintain the peel angle constant.

The effect of peel angle has been discussed by Kaelble [40, 41], Gardon [42], Gent and Hamed [39] and other researchers. Figure 5-19 shows data by Kaelble [41]. Maxima and minima in the range of 30 - 40 degrees are attributed to the transition of the failure mechanism from cleavage to boundary shear. All tapes displayed a minimum of peel force at angles 120 - 140 degrees.

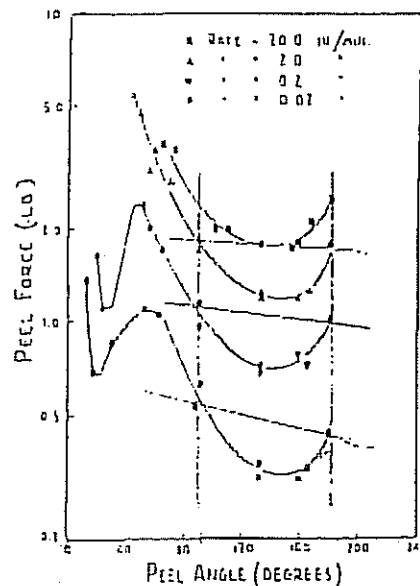


Fig. 5-19. Peel force as a function of peel angle for a glass cloth tape. (Reprinted from Transactions of the Society of Rheology IV: 45-73 (1960).)



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www.uspto.gov

NOTICE OF ALLOWANCE AND FEE(S) DUE

86625 7590 11/17/2011
Brennan, Manna & Diamond, LLC
The Carnegie Building
75 East Market Street
Akron, OH 44308

EXAMINER

NORDMEYER, PATRICIA L.

ART UNIT

PAPER NUMBER

1788

DATE MAILED: 11/17/2011

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	5923.0010	2438

TITLE OF INVENTION: ADHESIVE TAPE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$870	\$300	\$0	\$1170	02/17/2012

THE APPLICATION IDENTIFIED ABOVE HAS BEEN EXAMINED AND IS ALLOWED FOR ISSUANCE AS A PATENT. PROSECUTION ON THE MERITS IS CLOSED. THIS NOTICE OF ALLOWANCE IS NOT A GRANT OF PATENT RIGHTS. THIS APPLICATION IS SUBJECT TO WITHDRAWAL FROM ISSUE AT THE INITIATIVE OF THE OFFICE OR UPON PETITION BY THE APPLICANT. SEE 37 CFR 1.313 AND MPEP 1308.

THE ISSUE FEE AND PUBLICATION FEE (IF REQUIRED) MUST BE PAID WITHIN THREE MONTHS FROM THE MAILING DATE OF THIS NOTICE OR THIS APPLICATION SHALL BE REGARDED AS ABANDONED. THIS STATUTORY PERIOD CANNOT BE EXTENDED. SEE 35 U.S.C. 151. THE ISSUE FEE DUE INDICATED ABOVE DOES NOT REFLECT A CREDIT FOR ANY PREVIOUSLY PAID ISSUE FEE IN THIS APPLICATION. IF AN ISSUE FEE HAS PREVIOUSLY BEEN PAID IN THIS APPLICATION (AS SHOWN ABOVE), THE RETURN OF PART B OF THIS FORM WILL BE CONSIDERED A REQUEST TO REAPPLY THE PREVIOUSLY PAID ISSUE FEE TOWARD THE ISSUE FEE NOW DUE.

HOW TO REPLY TO THIS NOTICE:

I. Review the SMALL ENTITY status shown above.

If the SMALL ENTITY is shown as YES, verify your current SMALL ENTITY status:

- A. If the status is the same, pay the TOTAL FEE(S) DUE shown above.
- B. If the status above is to be removed, check box 5b on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and twice the amount of the ISSUE FEE shown above, or

If the SMALL ENTITY is shown as NO:

- A. Pay TOTAL FEE(S) DUE shown above, or

B. If applicant claimed SMALL ENTITY status before, or is now claiming SMALL ENTITY status, check box 5a on Part B - Fee(s) Transmittal and pay the PUBLICATION FEE (if required) and 1/2 the ISSUE FEE shown above.

II. PART B - FEE(S) TRANSMITTAL, or its equivalent, must be completed and returned to the United States Patent and Trademark Office (USPTO) with your ISSUE FEE and PUBLICATION FEE (if required). If you are charging the fee(s) to your deposit account, section "4b" of Part B - Fee(s) Transmittal should be completed and an extra copy of the form should be submitted. If an equivalent of Part B is filed, a request to reapply a previously paid issue fee must be clearly made, and delays in processing may occur due to the difficulty in recognizing the paper as an equivalent of Part B.

III. All communications regarding this application must give the application number. Please direct all communications prior to issuance to Mail Stop ISSUE FEE unless advised to the contrary.

IMPORTANT REMINDER: Utility patents issuing on applications filed on or after Dec. 12, 1980 may require payment of maintenance fees. It is patentee's responsibility to ensure timely payment of maintenance fees when due.

PART B - FEE(S) TRANSMITTAL

Complete and send this form, together with applicable fee(s), to: **Mail** Mail Stop ISSUE FEE
 Commissioner for Patents
 P.O. Box 1450
 Alexandria, Virginia 22313-1450
 or **Fax** (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

86625 7590 11/17/2011
 Brennan, Manna & Diamond, LLC
 The Carnegie Building
 75 East Market Street
 Akron, OH 44308

Certificate of Mailing or Transmission
 I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

(Depositor's name)
(Signature)
(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	5923.0010	2438

TITLE OF INVENTION: ADHESIVE TAPE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID (ISSUE FEE)	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	\$870	\$300	\$0	\$1170	02/17/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
NORDMEYER, PATRICIA L	1788	428-343000

Change of correspondence address or indication of "Fee Address" (37 R 1.363).
☐ Change of correspondence address (or Change of Correspondence Address form PTO/SB/122) attached.
☐ "Fee Address" indication (or "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

1 _____
 2 _____
 3 _____

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.111. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☐ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☐ Issue Fee
☐ Publication Fee (No small entity discount permitted)
☐ Advance Order - # of Copies _____

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

- ☐ A check is enclosed.
☐ Payment by credit card. Form PTO-2038 is attached.
☐ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number _____ (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☐ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant; a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature _____

Date _____

Typed or printed name _____

Registration No. _____

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

Under the Paperwork Reduction Act of 1995, no persons are required to respond to a collection of information unless it displays a valid OMB control number.



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	5923.0010	2438

86625 7590 11/17/2011
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 75 East Market Street
 Akron, OH 44308

EXAMINER

NORDMEYER, PATRICIA L

ART UNIT	PAPER NUMBER
----------	--------------

1788

DATE MAILED: 11/17/2011

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
 (application filed on or after May 29, 2000)

The Patent Term Adjustment to date is 408 day(s). If the issue fee is paid on the date that is three months after the mailing date of this notice and the patent issues on the Tuesday before the date that is 28 weeks (six and a half months) after the mailing date of this notice, the Patent Term Adjustment will be 408 day(s).

If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Customer Service Center of the Office of Patent Publication at 1-(888)-786-0101 or (571)-272-4200.

Privacy Act Statement

The Privacy Act of 1974 (P.L. 93-579) requires that you be given certain information in connection with your submission of the attached form related to a patent application or patent. Accordingly, pursuant to the requirements of the Act, please be advised that: (1) the general authority for the collection of this information is 35 U.S.C. 2(b)(2); (2) furnishing of the information solicited is voluntary; and (3) the principal purpose for which the information is used by the U.S. Patent and Trademark Office is to process and/or examine your submission related to a patent application or patent. If you do not furnish the requested information, the U.S. Patent and Trademark Office may not be able to process and/or examine your submission, which may result in termination of proceedings or abandonment of the application or expiration of the patent.

The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
3. A record in this system of records may be disclosed, as a routine use, to a Member of Congress submitting a request involving an individual, to whom the record pertains, when the individual has requested assistance from the Member with respect to the subject matter of the record.
4. A record in this system of records may be disclosed, as a routine use, to a contractor of the Agency having need for the information in order to perform a contract. Recipients of information shall be required to comply with the requirements of the Privacy Act of 1974, as amended, pursuant to 5 U.S.C. 552a(m).
5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (i.e., GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Notice of Allowability	Application No.	Applicant(s)	
	10/674,108	GOECKE, THOMAS R.	
	Examiner PATRICIA NORDMEYER	Art Unit 1788	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS. This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to Amendment after Non-final rejection dated October 6, 2011.
2. ☐ An election was made by the applicant in response to a restriction requirement set forth during the interview on ____; the restriction requirement and election have been incorporated into this action.
3. ☒ The allowed claim(s) is/are 1-7, 9-12, 15 and 16.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: ____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date ____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date ____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

- | | |
|---|--|
| <ol style="list-style-type: none"> 1. <input type="checkbox"/> Notice of References Cited (PTO-892) 2. <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) 3. <input checked="" type="checkbox"/> Information Disclosure Statements (PTO/SB/08),
Paper No./Mail Date <u>10/6/11</u> 4. <input type="checkbox"/> Examiner's Comment Regarding Requirement for Deposit of Biological Material | <ol style="list-style-type: none"> 5. <input type="checkbox"/> Notice of Informal Patent Application 6. <input type="checkbox"/> Interview Summary (PTO-413),
Paper No./Mail Date ____. 7. <input type="checkbox"/> Examiner's Amendment/Comment 8. <input checked="" type="checkbox"/> Examiner's Statement of Reasons for Allowance 9. <input type="checkbox"/> Other ____. |
|---|--|

/Patricia L. Nordmeyer/
Primary Examiner, Art Unit 1788

Application/Control Number: 10/674,108
Art Unit: 1788

Page 2

REASONS FOR ALLOWANCE

1. The following is an examiner's statement of reasons for allowance:

The closest prior art of record fails to teach or suggest the recited adhesive tape. The independent claims identify the uniquely distinct features of a substrate that include a polymer layer having a Shore A Hardness of 92 to 100 and an uniform thickness of about 0.020" to 0.065", an adhesive layer attached to the polymer layer, wherein the adhesive has a peel adhesion greater than 2.0 lb/in width when peeled at 90 degree angle. The closest prior art of record, DeRusha et al., Johnston et al., Hornibrook et al., Reeves et al. and Goswami et al., disclose different adhesive tapes, which either singularly or in combination, fail to anticipate or render obvious the above limitations.

Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Any inquiry concerning this communication or earlier communications from the examiner should be directed to PATRICIA NORDMEYER whose telephone number is (571)272-1496. The examiner can normally be reached on Mon.-Fri. from 10:00-6:30.

Application/Control Number: 10/674,108

Page 3

Art Unit: 1788

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Alicia Chevalier can be reached on (571) 272-1490. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Patricia L. Nordmeyer
Primary Examiner
Art Unit 1788

/Patricia L. Nordmeyer/
Primary Examiner, Art Unit 1788




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BIB DATA SHEET


CONFIRMATION NO. 2438

SERIAL NUMBER 10/674,108	FILING or 371(c) DATE 09/29/2003 RULE	CLASS 428	GROUP ART UNIT 1788	ATTORNEY DOCKET NO. 5923.0010		
APPLICANTS Thomas R. Goecke, Rocky River, OH; ** CONTINUING DATA ***** ** FOREIGN APPLICATIONS ***** ** IF REQUIRED, FOREIGN FILING LICENSE GRANTED ** ** SMALL ENTITY ** 12/17/2003						
Foreign Priority claimed <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No 35 USC 119(a-d) conditions met <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No Verified and <u>/PATRICIA L NORDMEYER/</u> Acknowledged <u>Examiner's Signature</u>		<input type="checkbox"/> Met after Allowance <u>Initials</u>	STATE OR COUNTRY OH	SHEETS DRAWINGS 1	TOTAL CLAIMS 10	INDEPENDENT CLAIMS 1
ADDRESS Brennan, Manna & Diamond, LLC The Carnegie Building 75 East Market Street Akron, OH 44308 UNITED STATES						
TITLE ADHESIVE TAPE						
FILING FEE RECEIVED 375	FEES: Authority has been given in Paper No. _____ to charge/credit DEPOSIT ACCOUNT No. _____ for following:			<input type="checkbox"/> All Fees		
				<input type="checkbox"/> 1.16 Fees (Filing)		
				<input type="checkbox"/> 1.17 Fees (Processing Ext. of time)		
				<input type="checkbox"/> 1.18 Fees (Issue)		
				<input type="checkbox"/> Other _____		
			<input type="checkbox"/> Credit			

<i>Index of Claims</i> 	Application/Control No. 10674108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.
	Examiner Patricia L Nordmeyer	Art Unit 1783


✓	Rejected	-	Cancelled	N	Non-Elected	A	Appeal
=	Allowed	÷	Restricted	I	Interference	O	Objected

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant				<input type="checkbox"/> CPA		<input type="checkbox"/> T.D.		<input type="checkbox"/> R.1.47	
CLAIM		DATE							
Final	Original	07/27/2010	03/29/2011	11/08/2011					
	1	✓	✓	=					
	2	✓	✓	=					
	3	✓	✓	=					
	4	✓	✓	=					
	5	✓	✓	=					
	6	✓	✓	=					
	7	✓	✓	=					
	8	-	-	-					
	9	✓	✓	=					
	10	✓	✓	=					
	11	✓	✓	=					
	12	✓	✓	=					
	13		✓	-					
	14		✓	-					
	15			=					
	16			=					

Issue Classification 	Application/Control No. 10674108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.
	Examiner PATRICIA NORDMEYER	Art Unit 1788

[illegible][illegible]

NONE		Total Claims Allowed:	
(Assistant Examiner)	(Date)	13	
/PATRICIA NORDMEYER/ Primary Examiner, Art Unit 1788	11/8/11	O.G. Print Claim(s)	O.G. Print Figure
(Primary Examiner)	(Date)	1	1

Search Notes 	Application/Control No. 10674108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.
	Examiner Patricia L Nordmeyer	Art Unit 1783

SEARCHED

Class	Subclass	Date	Examiner
428	40.1, 40.8, 41.6, 42.1, 141, 174, 332, 337, 343, 906	7/22/10	pln

SEARCH NOTES

Search Notes	Date	Examiner
Inventor search	7/22/10	pln
East word and class search	7/22/10	pln
Updated East word and class search	3/25/11	pln
Interference word and class search	11/7/11	pln

INTERFERENCE SEARCH

Class	Subclass	Date	Examiner
428	141, 332, 337, 343, 906	11/7/11	pln

--	--

Complete and send this form, together with applicable fee(s), to: **Mail Stop ISSUE FEE**
Commissioner for Patents
P.O. Box 1450
Alexandria, Virginia 22313-1450
 or Fax (571)-273-2885

INSTRUCTIONS: This form should be used for transmitting the ISSUE FEE and PUBLICATION FEE (if required). Blocks 1 through 5 should be completed where appropriate. All further correspondence including the Patent, advance orders and notification of maintenance fees will be mailed to the current correspondence address as indicated unless corrected below or directed otherwise in Block 1, by (a) specifying a new correspondence address; and/or (b) indicating a separate "FEE ADDRESS" for maintenance fee notifications.

CURRENT CORRESPONDENCE ADDRESS (Note: Use Block 1 for any change of address)

86625 7590 11/17/2011
 Brennan, Manna & Diamond, LLC
 The Carnegie Building
 75 East Market Street
 Akron, OH 44308

Note: A certificate of mailing can only be used for domestic mailings of the Fee(s) Transmittal. This certificate cannot be used for any other accompanying papers. Each additional paper, such as an assignment or formal drawing, must have its own certificate of mailing or transmission.

Certificate of Mailing or Transmission

I hereby certify that this Fee(s) Transmittal is being deposited with the United States Postal Service with sufficient postage for first class mail in an envelope addressed to the Mail Stop ISSUE FEE address above, or being facsimile transmitted to the USPTO (571) 273-2885, on the date indicated below.

Nancy Grams	(Depositor's name)
	(Signature)
November 23, 2011	(Date)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	09/29/2003	Thomas R. Goecke	5923.0010	2438

TITLE OF INVENTION: ADHESIVE TAPE

APPLN. TYPE	SMALL ENTITY	ISSUE FEE DUE	PUBLICATION FEE DUE	PREV. PAID ISSUE FEE	TOTAL FEE(S) DUE	DATE DUE
nonprovisional	YES	5870	5300	\$0	51170	02/17/2012

EXAMINER	ART UNIT	CLASS-SUBCLASS
NORDMEYER, PATRICIA L	1788	428-343000

Change of correspondence address or indication of "Fee Address" (37 C.F.R. 1.563).

☒ Change of correspondence address (for Change of Correspondence Address form PTO/SB/122) attached.

☐ "Fee Address" indication (for "Fee Address" Indication form PTO/SB/47; Rev 03-02 or more recent) attached. Use of a Customer Number is required.

2. For printing on the patent front page, list

(1) the names of up to 3 registered patent attorneys or agents OR, alternatively,

(2) the name of a single firm (having as a member a registered attorney or agent) and the names of up to 2 registered patent attorneys or agents. If no name is listed, no name will be printed.

Brennan, Manna &
 Diamond
 Akron, Ohio

3. ASSIGNEE NAME AND RESIDENCE DATA TO BE PRINTED ON THE PATENT (print or type)

PLEASE NOTE: Unless an assignee is identified below, no assignee data will appear on the patent. If an assignee is identified below, the document has been filed for recordation as set forth in 37 CFR 3.11. Completion of this form is NOT a substitute for filing an assignment.

(A) NAME OF ASSIGNEE

(B) RESIDENCE: (CITY and STATE OR COUNTRY)

Shieldmark, Inc.

Rocky River, Ohio

Please check the appropriate assignee category or categories (will not be printed on the patent): ☐ Individual ☒ Corporation or other private group entity ☐ Government

4a. The following fee(s) are submitted:

- ☒ Issue Fee
☒ Publication Fee (No small entity discount permitted)
☒ Advance Order - # of Copies 3

4b. Payment of Fee(s): (Please first reapply any previously paid issue fee shown above)

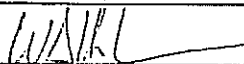
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☒ Payment by credit card. Form PTO-2038 is attached.
☒ The Director is hereby authorized to charge the required fee(s), any deficiency, or credit any overpayment, to Deposit Account Number 50-4883 (enclose an extra copy of this form).

5. Change in Entity Status (from status indicated above)

- ☒ a. Applicant claims SMALL ENTITY status. See 37 CFR 1.27. ☐ b. Applicant is no longer claiming SMALL ENTITY status. See 37 CFR 1.27(g)(2).

NOTE: The Issue Fee and Publication Fee (if required) will not be accepted from anyone other than the applicant: a registered attorney or agent; or the assignee or other party in interest as shown by the records of the United States Patent and Trademark Office.

Authorized Signature



Date

November 23, 2011

Typed or printed name

W. Scott Harders

Registration No.

42,629

This collection of information is required by 37 CFR 1.311. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and filing the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, Virginia 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, Virginia 22313-1450.

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Electronic Patent Application Fee Transmittal

Application Number:	10674108			
Filing Date:	29-Sep-2003			
Title of Invention:	ADHESIVE TAPE			
First Named Inventor/Applicant Name:	Thomas R. Goecke			
Filer:	Walter Scott Harders/Nancy Grams			
Attorney Docket Number:	5923.0010			
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Utility Appl issue fee	2501	1	870	870
Publ. Fee- early, voluntary, or normal	1504	1	300	300

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Extension-of-Time:				
Miscellaneous:				
Printed copy of patent - no color	8001	3	3	9
Total in USD (\$)				1179

Electronic Acknowledgement Receipt

EFS ID:	11477534
Application Number:	10674108
International Application Number:	
Confirmation Number:	2438
Title of Invention:	ADHESIVE TAPE
First Named Inventor/Applicant Name:	Thomas R. Goecke
Customer Number:	86625
Filer:	Walter Scott Harders/Nancy Grams
Filer Authorized By:	Walter Scott Harders
Attorney Docket Number:	5923.0010
Receipt Date:	23-NOV-2011
Filing Date:	29-SEP-2003
Time Stamp:	15:32:54
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$ 1179
RAM confirmation Number	3361
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part (.zip)	Pages (if appl.)
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Warnings:					
Information:					
Total Files Size (in bytes):			136748		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international-filing date of the application.</p>					

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of: Thomas R. Goecke Examiner : Patricia L. Nordmeyer

Application No. : 10/674,108 Group Art : 1783

Filing Date : 29 September 2003 Docket No. : 5923.0001

Confirmation No. : 2438

Title: Adhesive Tape

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPLICANT'S COMMENTS ON
STATEMENT OF REASONS FOR ALLOWANCE

Dear Examiner:

This is in response to the Notice of Allowability dated November 17, 2011, issued in connection with the above-referenced application. These Comments, electronically filed via the EFS system before or with the payment of the issue fee are thus, timely filed.

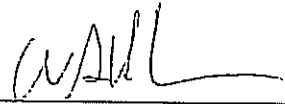
COMMENTS

Applicant notes that the Examiner's Reasons for Allowance variously includes elements that are not present in each allowed claim. Claims 1-7 and 9-12, 15 and 16 are believed allowable for their respective recited elements.

While no additional fees are believed due, the Commissioner is hereby authorized to charge any necessary additional fees, or credit any overpayment, to Deposit Account No. 50-4883, referencing Attorney Docket No. 5923.0001.

Respectfully submitted,

Dated: 23 NOV 2011

By: 
W. Scott Harders
Registration No. 42,629

Brennan, Manna & Diamond, LLC
75 East Market Street
Akron, OH 44308

To: patents@bmdllc.com, wsharders@bmdllc.com, jaruller@bmdllc.com
From: PAIR_eOfficeAction@uspto.gov
Cc: PAIR_eOfficeAction@uspto.gov
Subject: Private PAIR Correspondence Notification for Customer Number 86625

Dec 15, 2011 05:44:03 AM

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Brennan, Manna & Diamond, LLC
The Carnegie Building
75 East Market Street
Akron, OH 44308
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Application	Document	Mailroom Date	Attorney Docket No.
10674108	ISSUE.NTF	12/14/2011	5923.0010

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APPLICATION NO.	ISSUE DATE	PATENT NO.	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/674,108	01/03/2012	8088480	5923.0010	2438

86625 7590 12/14/2011
 Brennan, Manna & Diamond, LLC
 The Carnegie Building
 75 East Market Street
 Akron, OH 44308

ISSUE NOTIFICATION

The projected patent number and issue date are specified above.

Determination of Patent Term Adjustment under 35 U.S.C. 154 (b)
 (application filed on or after May 29, 2000)

The Patent Term Adjustment is 1013 day(s). Any patent to issue from the above-identified application will include an indication of the adjustment on the front page.


If a Continued Prosecution Application (CPA) was filed in the above-identified application, the filing date that determines Patent Term Adjustment is the filing date of the most recent CPA.

Applicant will be able to obtain more detailed information by accessing the Patent Application Information Retrieval (PAIR) WEB site (<http://pair.uspto.gov>).

Any questions regarding the Patent Term Extension or Adjustment determination should be directed to the Office of Patent Legal Administration at (571)-272-7702. Questions relating to issue and publication fee payments should be directed to the Application Assistance Unit (AAU) of the Office of Data Management (ODM) at (571)-272-4200.

APPLICANT(s) (Please see PAIR WEB site <http://pair.uspto.gov> for additional applicants):

Thomas R. Goecke, Rocky River, OH;

Issue Classification 	Application/Control No. 10674108	Applicant(s)/Patent Under Reexamination GOECKE, THOMAS R.
	Examiner PATRICIA NORDMEYER	Art Unit 1788

ORIGINAL						INTERNATIONAL CLASSIFICATION												
CLASS		SUBCLASS				CLAIMED					NON-CLAIMED							
429		343				D	0	6	N	7 / 04 (2006.0)								
CROSS REFERENCE(S)						C	0	9	J	7 / 02 (2006.0)								
						B	3	2	B	7 / 12 (2006.0)								
CLASS	SUBCLASS (ONE SUBCLASS PER BLOCK)																	
428	141	332	337	906														

<input type="checkbox"/> Claims renumbered in the same order as presented by applicant <input type="checkbox"/> CPA <input type="checkbox"/> T.D. <input type="checkbox"/> R.1.47															
Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original	Final	Original
5	1														
6	2														
7	3														
8	4														
10	5														
9	6														
11	7														
12	9														
13	10														
1	11														
2	12														
3	15														
4	16														

NONE		Total Claims Allowed: 13	
(Assistant Examiner) /PATRICIA NORDMEYER/ Primary Examiner, Art Unit 1788	(Date) 11/8/11	O.G. Print Claim(s) 1	O.G. Print Figure 1
(Primary Examiner)	(Date)		

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

Page 1 of 1

PATENT NO. : 8,088,480

APPLICATION NO.: 10/674,108

ISSUE DATE : January 3, 2012

INVENTOR(S) : Thomas R. Goecke

It is certified that an error appears or errors appear in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

In Column 5, Claim 12, delete "the adhesive tape claim of claim 1," so Claim 12 will read as follows:

12. The adhesive tape of claim 5, wherein said polymer layer has a Shore A Hardness of between about 93 and 97.

MAILING ADDRESS OF SENDER (Please do not use customer number below):

W. Scott Harders/BRENNAN, MANNA & DIAMOND, LLC
75 East Market Street
Akron, OH 44308

This collection of information is required by 37 CFR 1.322, 1.323, and 1.324. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 1.0 hour to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Attention Certificate of Corrections Branch, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

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The information provided by you in this form will be subject to the following routine uses:

1. The information on this form will be treated confidentially to the extent allowed under the Freedom of Information Act (5 U.S.C. 552) and the Privacy Act (5 U.S.C. 552a). Records from this system of records may be disclosed to the Department of Justice to determine whether disclosure of these records is required by the Freedom of Information Act.
2. A record from this system of records may be disclosed, as a routine use, in the course of presenting evidence to a court, magistrate, or administrative tribunal, including disclosures to opposing counsel in the course of settlement negotiations.
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5. A record related to an International Application filed under the Patent Cooperation Treaty in this system of records may be disclosed, as a routine use, to the International Bureau of the World Intellectual Property Organization, pursuant to the Patent Cooperation Treaty.
6. A record in this system of records may be disclosed, as a routine use, to another federal agency for purposes of National Security review (35 U.S.C. 181) and for review pursuant to the Atomic Energy Act (42 U.S.C. 218(c)).
7. A record from this system of records may be disclosed, as a routine use, to the Administrator, General Services, or his/her designee, during an inspection of records conducted by GSA as part of that agency's responsibility to recommend improvements in records management practices and programs, under authority of 44 U.S.C. 2904 and 2906. Such disclosure shall be made in accordance with the GSA regulations governing inspection of records for this purpose, and any other relevant (*i.e.*, GSA or Commerce) directive. Such disclosure shall not be used to make determinations about individuals.
8. A record from this system of records may be disclosed, as a routine use, to the public after either publication of the application pursuant to 35 U.S.C. 122(b) or issuance of a patent pursuant to 35 U.S.C. 151. Further, a record may be disclosed, subject to the limitations of 37 CFR 1.14, as a routine use, to the public if the record was filed in an application which became abandoned or in which the proceedings were terminated and which application is referenced by either a published application, an application open to public inspection or an issued patent.
9. A record from this system of records may be disclosed, as a routine use, to a Federal, State, or local law enforcement agency, if the USPTO becomes aware of a violation or potential violation of law or regulation.

Electronic Patent Application Fee Transmittal

Application Number:	10674108			
Filing Date:	29-Sep-2003			
Title of Invention:	ADHESIVE TAPE			
First Named Inventor/Applicant Name:	Thomas R. Goecke			
Filer:	Walter Scott Harders/Nancy Grams			
Attorney Docket Number:	5923.0010			
Filed as Small Entity				
Utility under 35 USC 111(a) Filing Fees				
Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Basic Filing:				
Pages:				
Claims:				
Miscellaneous-Filing:				
Petition:				
Patent-Appeals-and-Interference:				
Post-Allowance-and-Post-Issuance:				
Certificate of correction	1811	1	100	100
Extension-of-Time:				

Description	Fee Code	Quantity	Amount	Sub-Total in USD(\$)
Miscellaneous:				
Total in USD (\$)				100

Electronic Acknowledgement Receipt

EFS ID:	11778002
Application Number:	10674108
International Application Number:	
Confirmation Number:	2438
Title of Invention:	ADHESIVE TAPE
First Named Inventor/Applicant Name:	Thomas R. Goecke
Customer Number:	86625
Filer:	Walter Scott Harders/Nancy Grams
Filer Authorized By:	Walter Scott Harders
Attorney Docket Number:	5923.0010
Receipt Date:	06-JAN-2012
Filing Date:	29-SEP-2003
Time Stamp:	15:07:50
Application Type:	Utility under 35 USC 111(a)

Payment information:

Submitted with Payment	yes
Payment Type	Credit Card
Payment was successfully received in RAM	\$100
RAM confirmation Number	1658
Deposit Account	
Authorized User	

File Listing:

Document Number	Document Description	File Name	File Size(Bytes)/ Message Digest	Multi Part /.zip	Pages (if appl.)
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Information:					
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Warnings:					
Information:					
Total Files Size (in bytes):			194598		
<p>This Acknowledgement Receipt evidences receipt on the noted date by the USPTO of the indicated documents, characterized by the applicant, and including page counts, where applicable. It serves as evidence of receipt similar to a Post Card, as described in MPEP 503.</p> <p><u>New Applications Under 35 U.S.C. 111</u> If a new application is being filed and the application includes the necessary components for a filing date (see 37 CFR 1.53(b)-(d) and MPEP 506), a Filing Receipt (37 CFR 1.54) will be issued in due course and the date shown on this Acknowledgement Receipt will establish the filing date of the application.</p> <p><u>National Stage of an International Application under 35 U.S.C. 371</u> If a timely submission to enter the national stage of an international application is compliant with the conditions of 35 U.S.C. 371 and other applicable requirements a Form PCT/DO/EO/903 indicating acceptance of the application as a national stage submission under 35 U.S.C. 371 will be issued in addition to the Filing Receipt, in due course.</p> <p><u>New International Application Filed with the USPTO as a Receiving Office</u> If a new international application is being filed and the international application includes the necessary components for an international filing date (see PCT Article 11 and MPEP 1810), a Notification of the International Application Number and of the International Filing Date (Form PCT/RO/105) will be issued in due course, subject to prescriptions concerning national security, and the date shown on this Acknowledgement Receipt will establish the international filing date of the application.</p>					

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 8,088,480 B2
APPLICATION NO. : 10/674108
DATED : January 3, 2012
INVENTOR(S) : Thomas R. Goecke

Page 1 of 1

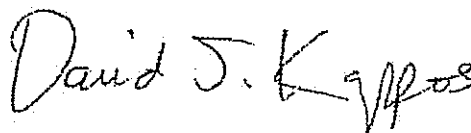
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

IN THE CLAIMS:

In Column 5, Lines 3-4, Claim 12, delete "the adhesive tape claim of claim 1," so Claim 12 will read as follows:

12. The adhesive tape of claim 5, wherein said polymer layer has a Shore A Hardness of between about 93 and 97.

Signed and Sealed this
Seventh Day of February, 2012

A handwritten signature in black ink, reading "David J. Kappos". The signature is written in a cursive, flowing style.

David J. Kappos
Director of the United States Patent and Trademark Office



US008088480B2

(12) **United States Patent**
Goecke

(10) **Patent No.:** **US 8,088,480 B2**
(45) **Date of Patent:** **Jan. 3, 2012**

(54) **ADHESIVE TAPE**

(75) **Inventor:** **Thomas R. Goecke, Rocky River, OH (US)**

(73) **Assignee:** **Shieldmark, Inc., Rocky River, OH (US)**

(*) **Notice:** Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 1013 days.

(21) **Appl. No.:** **10/674,108**

(22) **Filed:** **Sep. 29, 2003**

(65) **Prior Publication Data**
US 2005/0069697 A1 Mar. 31, 2005

(51) **Int. Cl.**
D06N 7/04 (2006.01)
C09J 7/02 (2006.01)
B32B 7/12 (2006.01)

(52) **U.S. Cl.** 428/343; 428/141; 428/332; 428/337; 428/906

(58) **Field of Classification Search** 428/40.1, 428/40.6, 41.3, 41.6, 42.1, 207, 343, 354, 428/217, 908.8, 40.8, 141, 174, 332, 337, 428/906

See application file for complete search history.

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Handbook of Pressure Sensitive Adhesive Technology, 3d Edition, Satas & Associates, 1999, Chapter 5—Peel Adhesion, p. 79.

* cited by examiner

Primary Examiner — Patricia Nordmeyer

(74) *Attorney, Agent, or Firm* — Brennan, Manna & Diamond

(57) **ABSTRACT**

The adhesive tape of this application comprises a layer of polymeric material, particularly a polyvinyl chloride, having a Shore A Hardness of between 92 and 100 and a layer of adhesive material attached to a surface of the layer of polymeric material.

13 Claims, 1 Drawing Sheet

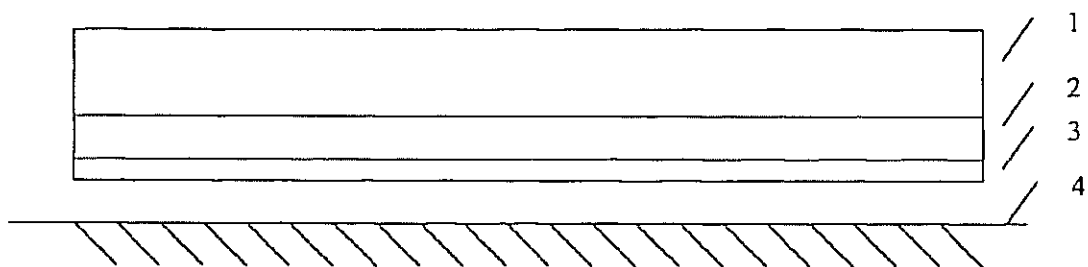


U.S. Patent

Jan. 3, 2012

US 8,088,480 B2

FIGURE 1



US 8,088,480 B2

1

ADHESIVE TAPE

BACKGROUND

This invention relates to an adhesive tape having superior ductility, strength, tear resistance and abrasion resistance, particularly a pressure sensitive adhesive. Polymeric pressure sensitive adhesive tapes are economical and adaptable to many different applications. One primary example is as floor marking in industrial and factory environments. However, there are several disadvantages to using such tape in industrial settings. One disadvantage is that the tape lacks sufficient strength and hardness to prevent wearing, tearing, cracking and breakage from heavy and repeated traffic, such as from forklift trucks. Similarly, as a result of poor adhesive quality, repeated traffic has a tendency to detach many commercially available tapes from the floor. Another disadvantage is that the aesthetic qualities and physical properties of the tape are diminished from scuffing, scratching, and the like. Such disadvantages plague existing polymeric pressure sensitive adhesive tapes. Because of these disadvantages that have been associated with polymeric pressure sensitive adhesive tape, wide industry acceptance has been historically difficult to achieve. Accordingly, many opt to rely on the time consuming and exacting practice of painting.

In view of the above discussion, it is an advantage of the present invention to provide a polymeric adhesive tape that has superior ductility, strength, tear resistance and abrasion resistance. Other advantages of the present invention will be apparent from the following detailed description.

SUMMARY OF INVENTION

According to one embodiment, an adhesive tape is provided. The tape has a first layer of polymeric material having a Shore A Hardness of between 92 and 100 and a thickness of between 0.020" and 0.065", and a second layer of adhesive. Preferably, the adhesive is of a pressure sensitive type.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a cross-sectional view illustrating the embodiment of a polymeric pressure sensitive adhesive tape.

DETAILED DESCRIPTION OF THE INVENTION

The adhesive tape of this invention usually comprises a layer of polymeric material and at least one layer of adhesive material. The pressure-sensitive adhesive tape of this invention is not limited to having only the above layers of polymeric material and layer of pressure-sensitive adhesive material. It may optionally have an additional layer, such as a laminating substrate on an outermost side of the above adhesive layer. The laminating substrate is usually peeled off and thrown away when pressure-sensitive adhesive tape is actually used. Therefore, inexpensive materials are preferred, however, there are no particular limitations on the materials used for the laminating substrate.

FIG. 1 is an example of the pressure-sensitive adhesive tape of this invention wherein a layer of polymeric material (1) is attached to the top side of a layer of pressure-sensitive adhesive material (2) and a laminating substrate (3) is attached to the bottom side of the pressure-sensitive adhesive material. Upon removal of the laminating substrate (3), the tape can be applied to a floor (4) with the application of pressure.

The pressure-sensitive adhesive tape of this invention can be produced in a variety of lengths, widths, and thickness. A

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variety of colors can also be used for the outer surface of the layer of polymeric material (1). For example, safety yellow can be used for aisle markings, or red can be used for quarantine and reject markings in a production facility. Coloring can be achieved by introducing a colorant in any form, including pigments and dyes into the polymeric material.

The adhesive employed in layer material (3) may be any of those heretofore employed in the art for preparing adhesive structures. By way of illustration, suitable adhesives of this general description include those disclosed in U.S. Pat. No. 5,061,559, herein incorporated by reference.

The layer of polymeric material (1) may be a durable polymer such as polyvinyl chloride, polycarbonate, or a terpolymer comprised of acrylonitrile, butadiene and styrene or the like. A clear or tinted polyvinyl chloride is a preferred material. The polymer selected must have Shore A Hardness between, for example, 92-100, and preferably between 93-97. The outer surface of the layer of polymeric material (1) is preferably textured. The layer of polymeric material (1) may have a thickness of about, for example, 0.020" to 0.065".

Advantageously, this embodiment of the invention provides improved tear resistance, strength, and abrasion resistance by employing the sum or all of the combination of polymer selected, Shore A Hardness, textured surface, and layer thickness.

EXAMPLES

One embodiment of the invention will be described below in greater detail through the following examples.

Test samples were performed on a 4" wide sample of the pressure sensitive adhesive tape of this invention. The example tape was constructed of a semi-rigid 95A polyvinyl chloride from Artemis Industries, 2550 Gilcrest Rd, Akron Ohio 44305 which was extruded from a 2½" diameter NRM extrusion machine at 360-380° F. at an extrusion rate of 400 ft per hour to yield a 0.065 thick, 4" wide layer. A textured first surface of the extruded polymer layer was achieved by following the above process parameters. During extrusion a rubberized double sided carpet tape (Product #591B) from International Tape Co., P.O. Box 240, 6 Industrial Drive, Windham, N.H. 03087 was applied to a second side of the extruded polymer layer. A tape from Windmill Tapes of Great Britain (www.windmilltapes.com) was used for comparison purposes. Test samples were conditioned at 73±3° F. and 50±5% relative humidity for at least 24 hours prior to testing.

Tensile strength at yield point was determined according to ASTM D 882 testing method. A 0.5"x8" sample was prepared and placed in the jaws of the instrument at a separation of 4.0". The tester was started at a separation rate of 2.0 in/min. At the instance the tape yielded the force was recorded. Five replicates of each sample were conducted and the results were normalized to pounds per inch width. Results indicate higher yield point and higher absolute forces involved at yield point for the pressure sensitive adhesive tape of this invention. Particularly, the yield point in both machine and traverse direction were respectively, on average, 3.176 lb/in² and 3.136 lb/in².

Tear resistance was determined according to the ASTM D 1004 test method. The samples were die cut according to the method. The liner from the sample was removed and the sample was placed in the jaws of the tester at a separation of one inch. The tester was started at a rate of 2.0 in/min. The maximum force encountered during testing was recorded. Five replicates of each sample in both the machine and traverse direction were tested. Results indicate substantially improved tear strength in both the machine and traverse direc-

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tions for the pressure sensitive adhesive tape of this invention. Particularly, the tear strength in both machine and traverse direction was respectively, on average, 22.3 lb and 22.1 lb.

Caliper or thickness was determined according to the PSTC-33 method. Caliper of the material was determined both with and without the liner. Ten replicates of each sample were measured. Results indicate substantially increased thickness of the pressure sensitive adhesive tape of this invention, partly because of the inherent characteristics of the semi-rigid surface. Particularly, the thickness of the material, with and without the liner, was respectively, on average, 68.4 mil and 65.4 mil.

Peel adhesion was tested according to a modified PSTC-101D method. The modification included dwell time. Peel adhesion is a measure of the strength of the adhesive bond between the tape and the test surface. Exactly one (1.0) inch wide samples were applied to a standard stainless steel test panel at a rate of 24 in/min with a 4.5 pound rubber covered roller according to the method. The tape was then peeled from the substrate at a 90° angle after a dwell time of one hour. The force required for removal was measured. Five replicates of each sample were tested. Results indicate substantially increased peel adhesion for the pressure sensitive adhesive tape of this invention when applied to stainless steel. Particularly, the peel adhesion of this material was, on average, 5.2 lb/in width.

Abrasion resistance was determined according to a modified ASTM D 5264 test method. The material was cut to a 2.5"x6" size. A new 2"x4" piece of standard A-5 receptor material (moderate abrasive) from Gavarti Associates Ltd. was affixed with double-sided tape to the four pound instrument weight (0.5 lb/in² load). This in turn was placed over the test sample. The instrument was set for 100 strokes and operation was initiated. The instrument strikes an arc with the abrasive over the test material. Each stroke consists of one motion back and forth over the sample. When the cycles were completed the weighted abrasive was lifted and the test sample removed. At the conclusion of the test the overall quality of each sample was evaluated relatively for scratch resistance. Results indicate that the abrasion resistance of the pressure sensitive adhesive tape of this invention is improved over the comparative tape.

Results obtained were as follows:

	Average	σ (standard deviation)	N (test numbers)
Tensile at Yield at 2.0 in/min, lb/in²			
Inventive Sample Machine Direction	3,176	152	5
Inventive Sample Traverse Direction	3,136	56	5
Comparative Sample Machine Direction	2,400	160	5
Comparative Sample Traverse Direction	1,720	120	5
Tear at 2.0 in/min, lb.			
Inventive Sample Machine Direction	22.3	1.6	5
Inventive Sample Traverse Direction	22.1	0.4	5
Comparative Sample Machine Direction	2.2	0.1	5
Comparative Sample Traverse Direction	1.6	0.1	5
Caliper, mil.			
Inventive Sample With Liner	68.4	0.5	10
Inventive Sample Without Liner	65.4	0.5	10
Comparative Sample	5.5	0.04	10
Adhesion to Stainless lb/in width			

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-continued

	Average	σ (standard deviation)	N (test numbers)
Abrasion Resistance			
Inventive Sample	5.2	0.5	5
Comparative Sample	1.7	0.03	5
Peel Adhesion			
Inventive Sample	Excellent - no sign of damage		
Comparative Sample	Fair - moderate damage		

Since certain changes may be made without departing from the scope of the invention herein involved, it is intended that all matter described in the foregoing description, including the examples, shall be interpreted as illustrative and not in a limiting sense.

What is claimed is:

1. An adhesive tape comprising:
a polymer having a Shore A Hardness of between 92 and 100; and
a layer of pressure sensitive adhesive comprising a first side and an opposed second side, the first side being in direct and uninterrupted contact with the polymer layer where the adhesive tape comprises an average thickness between 65 mil and 69 mil.
2. An adhesive tape for application to a flooring environment comprising:
a polymer layer having a thickness between 0.020" and 0.065", the polymer layer defining a first side; and
a double sided adhesive layer where one side of the double sided adhesive layer is in substantially continuous contact with the first side of the polymer layer and an opposing side of the double sided adhesive layer is disposed to adhere to the flooring environment;
where the adhesive tape has a peel adhesion greater than 2.0 lb/in width, measured under a test method including peeling the tape at a 90 degree angle after application to a stainless steel panel.
3. The adhesive tape as set forth in claim 2, wherein the test method further includes peeling the tape at a 90 degree angle after application to a stainless steel panel and allowing a dwell of one hour.
4. The adhesive tape as set forth in claim 2, further comprising a substantially planar floor adhered to the adhesive on the opposing side, where the adhesive tape provides an aisle marking system.
5. An adhesive tape comprising:
a polymer layer having a Shore A Hardness of between 92 and 100 and a substantially uniform thickness of between about 0.020" to 0.065"; and
a layer of adhesive attached to said polymer layer;
where the adhesive tape comprises a peel adhesion greater than 2.0 lb/in width when peeled at a 90 degree angle under a modified PSTC-101 method where the modified PSTC-101 method comprises a dwell time of one hour.
6. The adhesive tape of claim 5, further comprising a substrate attached to an outermost side of said layer of adhesive.
7. The adhesive tape claim of claim 5, wherein said polymer layer includes a textured surface.
8. The adhesive tape of claim 5, wherein said polymer layer is comprised of a polyvinyl chloride.
9. The adhesive tape of claim 8, wherein said polyvinyl chloride comprises a clear polymer.
10. The adhesive tape of claim 5, wherein said polymer layer includes coloring pigment.

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11. The adhesive tape of claim 5, wherein said adhesive comprises a rubberized double-sided tape.

12. The adhesive tape of claim 5, the adhesive tape claim of claim 1, wherein said polymer layer has a Shore A Hardness of between about 93 and 97.

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13. The adhesive tape of claim 5, wherein said adhesive is pressure sensitive.

* * * * *

UNITED STATES PATENT AND TRADEMARK OFFICE
CERTIFICATE OF CORRECTION

PATENT NO. : 8,088,480 B2
APPLICATION NO. : 10/674108
DATED : January 3, 2012
INVENTOR(S) : Thomas R. Goecke

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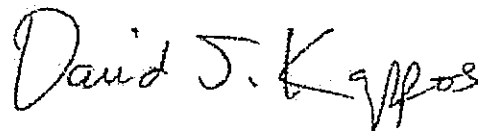
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

IN THE CLAIMS:

In Column 5, Lines 3-4, Claim 12, delete "the adhesive tape claim of claim 1," so Claim 12 will read as follows:

12. The adhesive tape of claim 5, wherein said polymer layer has a Shore A Hardness of between about 93 and 97.

Signed and Sealed this
Seventh Day of February, 2012

A handwritten signature in black ink, reading "David J. Kappos". The signature is written in a cursive, flowing style.

David J. Kappos
Director of the United States Patent and Trademark Office